

Seboomook Unit Management Plan

Draft Final Plan



**Maine Department of Conservation
Bureau of Parks and Lands**

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The Bureau also acknowledges the helpful participation of the Seboomook Unit Management Plan Advisory Committee (listed in Appendix A), and the many members of the public who participated in the ten public meetings held during the preparation of this Plan.

I. Introduction

About This Document

This document constitutes a ten-year Management Plan (the Plan) for the Reserved Land properties collectively known as the “Seboomook Unit” managed by the Maine Bureau of Parks and Lands (the Bureau). The Plan includes background information about the planning process and the regional context of the Plan, but the core of the Plan is a description of the resources in the Unit, the management issues as understood from Bureau research and analysis, and public input from meeting and written comments, a Vision for the future of the Unit, and management recommendations.

One objective of the Plan will be to provide a balanced spectrum of opportunities across the Unit, and in keeping with the opportunities and resources available in the broader surrounding Moosehead Region. In developing the management recommendations for each parcel, the Bureau has been mindful of this broader perspective.

The Seboomook Unit Management Plan is a commitment to the public that the Seboomook Unit lands will be managed in accordance with the Bureau’s mission and goals, and within prescribed mandates. Revisions to the Plan commitments will occur only after providing opportunities for public comment. The Management Plan will also serve as guidance to the Bureau staff. It will provide clear management objectives within the Plan area, while providing a degree of flexibility in achieving these objectives. It will not, however, be a plan of operations.

An important aspect of the management of public lands is monitoring commitments made in the plans, and evaluating the outcomes of management activities relative to overall objectives. The management plans describe monitoring and evaluation procedures for recreational use, wildlife management, management of Ecological Reserves, and timber management.

The Seboomook Unit Management Plan will be effective for a 10-year period. After that time, a review and update of the information and management objectives will be conducted. The Bureau recognizes that some resources and management issues will undergo change over time, and several of the stated objectives will require longer than the 10-year Plan period to achieve.

What is the Seboomook Unit?

The Seboomook Unit is comprised of four distinct parcels (Figure 1).

- (1) **Seboomook and Canada Falls:** This is the largest parcel, and includes 41,436 acres, located north and west of Moosehead Lake in Pittston Academy Grant, Soldiertown Township, Plymouth Township, Seboomook Township, and Little W Township. It includes 40,583 acres surrounding Seboomook Lake and extending south to the north end of Moosehead Lake, with 58 miles of water frontage; and 853 acres in a 24-mile shoreland strip adjacent to Canada Falls Lake and the South Branch of the Penobscot River, which flows out of Canada Falls Lake and drains into Seboomook Lake.
- (2) **St. John Ponds:** North of the Seboomook Parcel lies the St. John Headwater Ponds Parcel, a 3,917 acre block surrounding a series of small ponds at the top of the St. John River watershed, located in T4R17 WELS. It includes lands surrounding Upper First St. John Pond, Lower First St. John Pond; Robinson Pond; and the southern half of Third St. John Pond. This parcel was acquired with the condition that it be managed as an Ecological Reserve.
- (3) **Baker Lake:** Further North, in T7R17 WELS, it includes 1,650-acre shoreline buffer around Baker Lake, also within the St. John River drainage.
- (4) **Big Spencer Mountain:** To the south and east of Seboomook Lake is the Big Spencer Mountain Parcel, 4,242 acres acquired, like the St. John Ponds Parcel, with the stipulation that it be managed as an ecological reserve.

These lands offer a wide-ranging spectrum of high quality resources and recreational opportunities, including

- some of the best whitewater boating in the state (with predictable whitewater boating flow releases on the South Branch and boatable minimum flows on the West Branch);
- outstanding native brook trout lake fishing on Canada Falls Lake;
- big river salmon and trout fishing on the West Branch of the Penobscot;
- an increasingly popular muskellunge fishery at Baker Lake;
- one of the region's most prominent mountains, Big Spencer Mountain;
- varied wildlife viewing, hunting and trapping opportunities (two active eagles nests, loons, moose, deer, bear, and more);
- 14 primitive camping areas, with a total of over 50 campsites; and
- two businesses (in-holdings in the Unit): Historic Pittston Farm, once the hub of Great Northern's logging operations in the West Branch District, now a sporting camp; and Seboomook Wilderness Campground at the north end of Moosehead Lake, on the east end of the Seboomook Parcel, accessed through the Unit via the South Seboomook Road.

Figure 1
Seboomook Unit

Public Reserved Lands
51,245 acres; 106 miles shoreline
Acquired in 2002 and 2003

West Branch Easement
282,000 acres

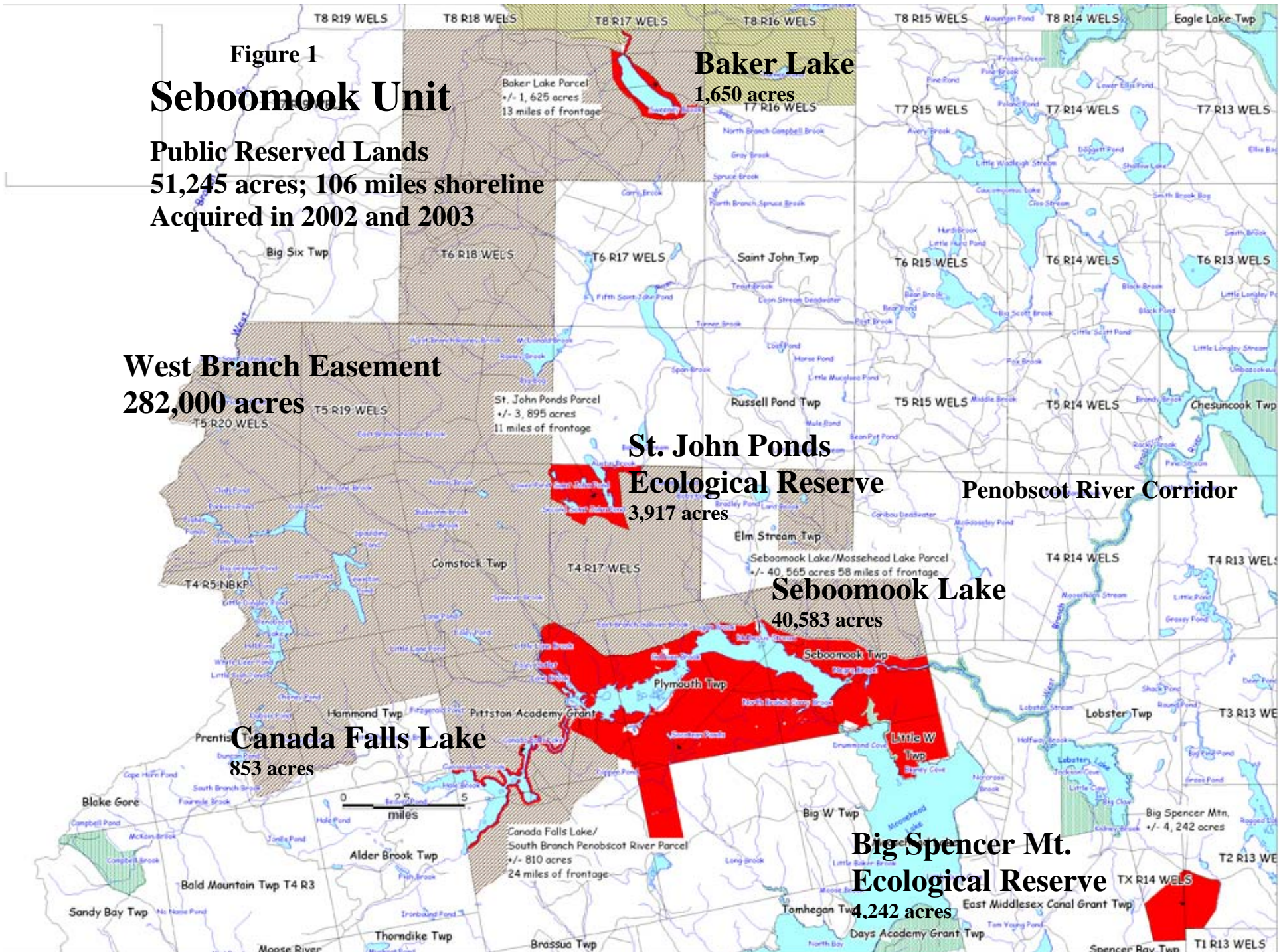
St. John Ponds
Ecological Reserve
3,917 acres

Penobscot River Corridor

Seboomook Lake
40,583 acres

Canada Falls Lake
853 acres

Big Spencer Mt.
Ecological Reserve
4,242 acres



II. The Planning Process

Statutory and Policy Guidance

Multiple use management plans are statutorily required for Public Reserved Lands pursuant to Title 12 MRSA § 1847 (2), and must be prepared in accordance with the guidelines set forth in the *Integrated Resource Policy* revised and adopted in December 2000 by the Bureau. These laws and policies direct the Bureau to identify and protect important natural, ecological, and historic attributes; enhance important fisheries and wildlife habitat; provide opportunities for a variety of quality outdoor recreation experiences; and provide a sustained yield of forest products by utilizing forest management techniques and silvicultural practices that enhance the forest environment.

Public Participation and the Planning Process

Overall, the development of Management Plans includes a series of steps, each involving interdisciplinary review, as well as extensive efforts to solicit and consider public comment, in order to achieve a Plan that integrates the various perspectives and needs while protecting and conserving the resources of the Unit. In total there have been nine public meetings held on the plan to date, including three Advisory Committee meetings. The public meeting on the final plan will be the 10th and final public meeting for this plan.

Resource Assessments: The first phase of the planning process includes a thorough study of the resources and opportunities available on the Seboomook Unit. Beginning in the summer of 2004, Bureau staff undertook an intensive review of the natural and geological, historic and cultural, fisheries and wildlife, recreation, and timber and renewable resources. Much of this information was obtained by conducting formal inventories of specific resource areas (Natural Resource Inventory, Cultural Resource Inventory, etc.). Resource professionals from within the agency provided information on wildlife, recreation, and timber resources. Mapping and GIS-related information was also obtained as part of this phase. Staff also participated in a number of all-day reconnaissance field trips to the Unit. The first was to inventory and characterize the land-based resources and recreational features (primarily camping sites and roads); the second was to view and experience the water-related opportunities on Canada Falls Lake, the South Branch, Seboomook Lake, and the West Branch from Seboomook Dam to Roll Dam campsite; the third involved an aerial reconnaissance (helicopter) with Maine Natural Areas Program staff focusing on the significant natural areas at Seboomook Lake, Canada Falls, St. John Ponds, and Baker Lake; and the fourth involved a snowmobile tour of the snowmobile trails system on the Unit and its connection to the surrounding trails, particularly the “Moosehead Loop.”

Issue Identification/Discussion through Public Meetings: Another component of the planning process involved conducting a variety of forums to determine and discuss management issues needing to be addressed by the Plan. These forums included

- a Public Scoping Session held in Greenville on August 31, 2004 to hear from various members of the public regarding the management concerns they had for the Unit properties;

- two “focus meetings” to hear from members of the public about concerns related to access to Unit, including the future relationship of the Unit to the North Maine Woods system, held on October 12, 2004; and April 13, 2006;
- a focus meeting was held on March 23, 2005 to hear concerns and issues regarding appropriate recreational uses for the Unit; and
- two special meetings with a work group established specifically to address access and gate fee issues, including the future relationship of the Unit with the North Maine Woods system, held December 6, 2004, September 19, 2005.

Advisory Committee Formation and Review of Preliminary Inventory and Assessment: In May 2005 the Bureau documented the resources and management issues identified as described above into a Preliminary Plan or Pre-Plan. At the same time a Public Advisory Committee was formed to review and discuss the Pre-Plan document on a more formal basis, and to provide input on the overall process for developing the Plan. Members of this Committee were selected on the basis of their resource expertise, and for their regional and local knowledge in areas important to the management of the Unit. A meeting to review the Preliminary Plan was held June 8, 2005.

Advisory Committee Review of the Bureau’s “Vision and Management Recommendations” : On September 27, 2005 the Bureau met with the Advisory Committee to review its proposed Vision and Management Recommendations for the Unit. This included review of proposed “resource allocations,” or areas designated for a specific type of management such as remote recreation, wildlife management, timber management, etc. Bureau planning and regional staffs are responsible for developing and proposing these allocations, which define the type and intensity of management to be applied for all of the lands within the Plan area (a more descriptive explanation of the allocation system may be found in the Bureau’s *Integrated Resource Policy*). A follow-up Advisory Committee meeting was held on May 11, 2006 to review revisions resulting from the comments received on the proposed vision and management recommendations.

Public Meeting on Final Draft Plan: Comments from the Advisory Committee on the Draft Vision and Management Recommendations, along with any comments from other members of the public and various resource professionals, were considered in developing this final draft of the Plan. This Plan will be presented and explained at a public meeting on October 3, 2006 so that members of the public will have an opportunity to express any comments and concerns about the Plan. Written comments on the plan will also be received until November 3, 2006.

Commissioner’s Review of the Proposed Plan, and Plan Adoption: Comments received on the Final Draft Plan will then be considered in preparing a Proposed Management Plan for review by the Department of Conservation’s Commissioner as recommended by the Director of the Bureau of Parks and Lands. After the Commissioner’s review and comment, and any needed revisions to the Proposed Plan, the Plan will be formally adopted by the Commissioner.

For a record of information presented and comments received at the public meetings held during the development of this Plan, see the Bureau’s website:

<http://www.state.me.us/doc/parks/programs/planning/seboomook/index.html>

III. The Planning Context

Acquisition History

The Seboomook Unit was acquired in December 2003 as part of a larger land conservation effort known as the “West Branch Project.” The West Branch Project resulted in state acquisition of the Seboomook Unit including approximately 51,580 acres of land, and acquisition of a conservation easement held by the Forest Society of Maine on another 282,000 acres surrounding the state lands (Map 1). By the terms of the easement, the surrounding lands will be managed for timber using sustainable forestry practices, while providing traditional public access, protecting environmentally sensitive areas, and prohibiting future development.

Many agencies and organizations participated in the campaign to acquire these lands, with the Forest Society of Maine playing a key role along with the Bureau. Major funding was provided by the USDA Forest Legacy Program, together with funds from the Maine Bureau of Parks and Lands, the Land for Maine’s Future Program, The Nature Conservancy, the Maine Outdoor Heritage Fund, the National Park Service’s Land and Water Conservation Fund, the Forest Society of Maine, the US Fish and Wildlife Service, and many other organizations and individual donors.

The Seboomook Unit lands were acquired subject to a number of acquisition agreements, which affect or condition how the Bureau may manage these lands. These agreements include:

1. Big Spencer Mountain and St. John Ponds Parcel: to be designated as Ecological Reserves.
2. Baker Lake Parcel: to be managed for remote recreation.
3. Seboomook, Canada Falls, Baker Lake and Moosehead Lake shorelines: subject to loon protection measures.

Relation to North Maine Woods System

The Seboomook Unit lands lie in the northern forested half of the state where, since the 1800’s, development has been sparse and the land has been largely owned by private timber companies. While the large timber management owners traditionally allowed public recreational use of their lands for hunting, fishing, trapping, and other backcountry uses, the opening of the lands with a network of roads in the 1960’s following elimination of river log drives lead to the formation of the North Maine Woods (NMW) recreation management system. The NMW organization operates a coordinated system of gates and charges day use and camping fees for recreational use of these private, largely working forest lands. Participating landowners include a number of private timber and land management companies as well as the State of Maine, and The Nature Conservancy.

The North Maine Woods 20-Mile gate, located at the entrance to the Seboomook Unit, is not part of the Seboomook Unit, but is located on lands owned by Merriweather, LLC and managed by Wagner Forest Management Company. Since 1999, this gate has been used to control

The Seboomook Unit is currently part of the NMW recreation management system. It is located at the periphery of the system (Figure 2), and abuts the 282,000-acre conservation easement that extinguishes development rights and provides the public with access rights, that is also within the North Maine Woods system.

Seboomook Unit



Parks and Lands Overlap

The lands acquired as part of the Seboomook parcel overlap the Penobscot River Corridor (PRC), which begins 400 feet below Seboomook Dam. The Bureau now has management control of the lands adjacent to two additional river sections tying into the PRC water trail – The North Branch and the South Branch of the Penobscot River. The water recreation opportunities on the Seboomook and Canada Falls parcels are logical extensions of the opportunities available in the Upper PRC. Since the PRC is part of the State Parks system, and the rest of the Unit is part of the Public Reserved Lands system, the Seboomook Unit incorporates the Bureau's two management models. Parks are generally smaller parcels that have relatively intensive recreation use, charge user fees, and have an active recreation management presence; while Public Reserved Lands are generally larger tracts managed for multiple uses including timber and wildlife management, with more dispersed recreation use, and generally no recreation use fees. Given the types of recreation activities expected to occur on some parcels within the Seboomook Unit, it is likely that the management of the Seboomook Unit will reflect a blend of these two models.

Public-Private Partnerships

The resources of the Seboomook Unit historically have been managed as private lands with strong public partnerships. Under state ownership, these partnerships are continuing and growing.

- The Unit is located at the gateway to the North Maine Woods system that manages public recreational use of these private forest lands. This area occupies an important niche in the long tradition of public use of Maine's extensive, privately held, undeveloped, back-country north woods for hunting, wildlife viewing, fishing, and boating. The acquisition of the Seboomook Unit coincided with the acquisition of permanent public access rights to 282,000 acres of privately held working forests surrounding the Unit.
- The Seboomook Unit includes two waterbodies that have been historically managed for the benefit of the downstream woods industries – first to store and transport logs by holding and releasing water; and later to store water for downstream hydropower generation. Under Great Northern's ownership, another tradition of cooperation was developed, with agreements related to fisheries flows and easements for public recreation use along the Penobscot River (including in West Branch in the Seboomook area). Although Great Northern sold the lands surrounding Seboomook and Canada Falls Lakes, it retained ownership of the islands, a 10-foot strip above the high water mark around these lakes, lands around the dams, and three parcels with informal boat access sites. Today Brookfield Power LLC owns these lands, and has already partnered with the Bureau in the improvement of whitewater boating access facilities on the South Branch and West Branch. In addition, a conservation easement, to be held by the Bureau, is being developed for the Seboomook islands and the 10-foot shoreline strip.

- Within the Unit are two private business in-holdings –Historic Pittston Farm and Seboomook Wilderness Campground. Both have expressed interest in working with the Bureau on provision of services that are mutually beneficial. Pittston Farm is already working with whitewater boaters to provide shuttle services, and is also planning to develop horse trails on its 44-acre property to serve its clients and is interested in pursuing opportunities for additional trails on the Seboomook Unit lands. Seboomook Wilderness Campground has traditionally provided supplies and services to area recreationists at its campground store.

New Water-Based Recreational Opportunities

On December 24, 2004 Great Lakes Hydropower LLC (now Brookfield Hydropower LLC), owner of dams at Canada Falls Lake and Seboomook Lake, received a new license from the Federal Energy Regulatory Commission for operation of these dams for storage purposes to supplement storage at the downstream Ripogenus hydroelectric project. The water management program provided for Seboomook and Canada Falls lakes in the new license is a significant improvement over past management, which was characterized by near complete drawdown of the lakes over winter, and variable drawdowns during the open water season. Under the new license:

- Lake water levels will be held more stable and will enhance fisheries and wildlife values and provide significant new or enhanced recreational opportunities for flatwater boating and camping on the lakes,
- Higher minimum summer flows and scheduled whitewater boating releases on the South Branch and the West Branch of the Penobscot River will increase opportunities for use of these rivers for both technical and beginning-intermediate whitewater boating, while enhancing fisheries habitat.
- Fall flow augmentation in the North Branch as well as the West Branch will provide increased big river fall fishing opportunities for landlocked salmon and wild trout.



South Branch of the Penobscot River – BP&L photo

Remote but Accessible Location

The Seboomook Unit is far enough from populated areas and interstate highways to be classified as “remote,” yet close enough to a couple gateway communities to make it a potential major destination area. The Unit is located more than 75 miles from an interstate, and 20 miles from a paved road. On the other hand Greenville and Jackman lie within 35 miles of the Unit, and the Moosehead region is becoming a recreation center, with many of the state’s most renowned recreation destinations within a 50 mile radius of the Unit (see below).

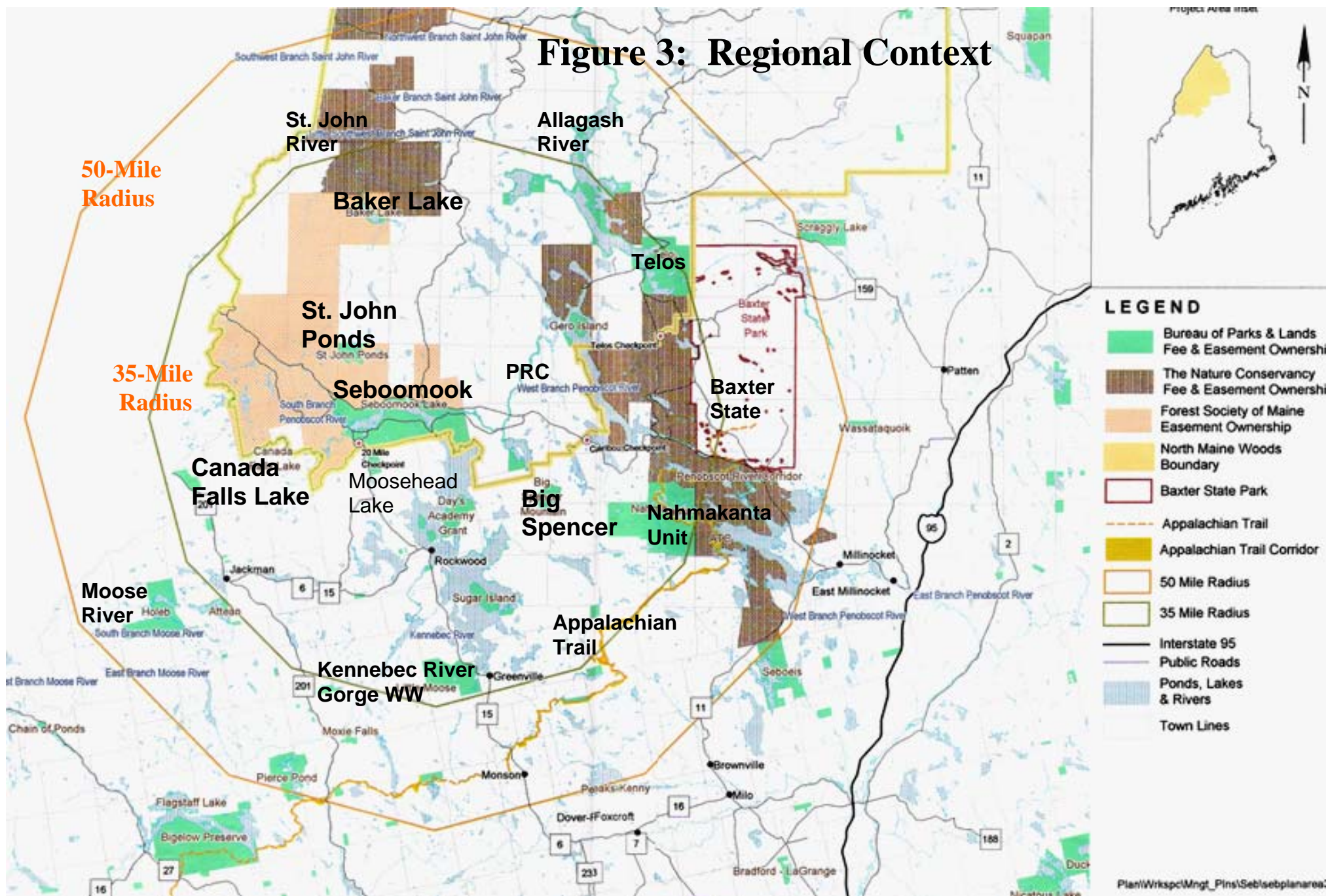
Public Recreation Resources in the Broader Region:

Jackman (population 1,057) and Greenville (population 1,419) are within a 35 mile radius of Seboomook dam, as is an impressive array of public and quasi-public recreational resources (see Figure 3), including:

- The start of the Penobscot River Corridor, down to Ripogenus Gorge
- The start of the Allagash Wilderness Waterway (State Park)
- The start of the Moose River Bow Trip
- The Kennebec Gorge whitewater boating area
- The start of the Upper St. John River trip (Maine’s best known unregulated, undeveloped big river extended canoe trip; the longest free-flowing river segment in the eastern U.S.)
- Baxter State Park
- Six other Public Reserved Lands including
 - Days Academy Grant and Sugar Island on Moosehead Lake,
 - Little Moose Unit just outside of Greenville,
 - Gero Island in Chesuncook Lake,
 - the Telos Unit in T6R11 WELS,
 - the Chamberlain Lake Unit
 - the Nahmakanta Unit in Rainbow Township, T1R12 WELS, and T1R11 WELS;
- Lily Bay State Park on Moosehead Lake
- The Debsconeag Lakes Wilderness Area (The Nature Conservancy)
- Portions of the “100-mile Wilderness” section of the Appalachian Trail-Whitecap Mountain to Baxter Park
- Katahdin Ironworks State Historic Site and surrounding Appalachian Mountain Club acquired Lands

Within a 50-mile radius, the following additional public recreational resources are available:

- The Lower Penobscot River Corridor (Ripogenus dam to the Debsconeags)
- Peaks-Kenny State Park (Sebec Lake)
- Sebois Reserved Lands Unit (Sebois Lake)
- Holeb Reserved Lands (around Holeb and Attean Ponds)
- Bigelow Preserve (Flagstaff lake) and Dead River Public Reserved Lands
- The Dead River canoe/whitewater boating trip
- The Appalachian Trail from Caratunk to Baxter State Park



The Tables below include a more thorough listing of these and other public recreation resources in this region.

**PUBLIC RESERVED AND NONRESERVED LANDS
within a 50-mile radius of the Seboomook Unit**

PISCATAQUIS COUNTY					
CTY	TOWN	NAME	FEE AC	CE AC	TOT AC
PIS	Beaver Cove	Beaver Cove	778	0	778
PIS	TXR14, T2R13, Northeast Carry	Big Spencer	4,348	0	4,348
PIS	Bowdoin College Grant	Bowdoin College Grant E	960	0	960
PIS	Soper Mtn, Eagle Lake Twp, T7R12, T7R13, T7R14, T9R13	Chamberlain Unit	8,127	0	8,127
PIS	Chesuncook Twp	Chesuncook	4,055	0	4,055
PIS	Days Academy Grant	Days Academy Grant	7,309	550	7,859
PIS	Frenchtown Twp	First Roach Pond	0	525	525
PIS	Frenchtown Twp	Frenchtown	23	0	23
PIS	Big Moose Twp, Little Moose Twp	Little Moose	13,552	0	13,552
PIS	Spencer Bay Twp, Lily Bay Twp	Moosehead Lake	1,650	0	1,650
PIS	T1R11, T1R12, Rainbow Twp	Nahmakanta	44,006	0	44,006
PIS	T08 R14 WELS	Otter Pond	1,423	0	1,423
PIS	T4R9, Lake View Plt	Seboeis	10,981	0	10,981
PIS	Days Academy Grant	Sugar Island	4,208	0	4,208
PIS	T6R11, T6R12, T7R11	Telos	22,969	0	22,969

SOMERSET COUNTY					
CTY	TOWN	NAME	FEE AC	CE AC	TOT AC
SOM	Bald Mountain Twp T2	Bald Mountain Twp	1,793	0	1,793
SOM	Dead River Twp, Bigelow Twp	Bigelow Preserve	15,140	0	15,140
SOM	Caratunk	Caratunk E, N, S	1,330	0	1,330
SOM	Flagstaff Twp, Dead River Twp, T3R4 BKP WKR	Dead River Peninsula	8,390	0	8,390
SOM	Dennistown Plt	Dennistown Plt	1,000	0	1,000
SOM	HAMMOND TWP	Hammond	960	0	960
SOM	Bradstreet Twp, Holeb Twp, Attean Twp, T5R7 BKP WKR	Holeb	20,144	11	20,155
SOM	Johnson Mountain	Johnson Mtn	960	0	960
SOM	MOOSE RIVER	Moose River S	282	0	282
SOM	Little W Twp, Sapling Twp, Seboomook Twp	Moosehead Lake – “Seboomook Unit”	771	0	771
SOM	Pittston Acad Cg, Little W Twp, Comstock Twp, W Middlesex Canal Gr, Soldiertown Twp, Seboomook Twp, Plymouth Twp, T7R7, T4R17 WELS	West Branch – “Seboomook Unit”	46,841	0	46,841
SOM	Moxie Gore	Moxie Gore	360	0	360
SOM	Pierce Pond Twp	Pierce Pond	0	1,315	1,315

SOM	Rockwood Strip	Rockwood Strip E Doyle, W	283	0	283
SOM	Sandwich Acad Grant	Sandwich Acad Grant	480	0	480
SOM	Sandy Bay Twp	Sandy Bay	2,712	0	2,712
SOM	Taunton & Raynham Acad Grant	Taunton & Raynham Acad Grant	674	0	674
SOM	The Forks Plt	The Forks Plt N, S	1,011	0	1,011
SOM	Upper Enchanted Twp	Upper Enchanted Twp	320	0	320
SOM	West Forks Plt	West Forks Plt Central, NE, NW, SW	1,285	0	1,285

STATE PARKS AND HISTORIC SITE LANDS
within a 50-mile radius of the Seboomook Unit

PISCATAQUIS COUNTY AND SOMERSET COUNTIES					
CTY	TOWN	NAME	FEE AC	CE AC	TOT AC
PIS	T5R11, T6R11, T6R12, T7R11, T7R12, T7R13, T7R14, T8R14, T9R12, T9R13, T10R12, T10R13 WELS; Soper Mtn, Eagle Lake Twp	Allagash Wilderness Waterway	15,801	0	15,801
PIS	T1R10, T1R11, T2R10 WELS, Rainbow Twp	Appalachian Trail	0	7,653	7,653
PIS	Elliotsville	Elliotsville Parcel	1,276	0	1,276
PIS	Days Academy Grant	Farm Island	980	0	980
PIS	Katahdin Iron Works Twp	Katahdin Iron Works State Historic Site	5	0	5
PIS	Brownville, KIW Twp, Williamsburg Twp	Katahdin Iron Works RR Trail	43	0	43
PIS	Beaver Cove	Lily Bay State Park	933	0	933
PIS	Lobster Twp	Lobster Lake	2,300	0	2,300
PIS/SOM	T1R9, T1R10, T2R9, T2R10, T3R11, T3R12, T4R12, T4R13, T4R14, T5R14, T6R13 WELS; Chesuncook Twp, E Middlesex Canal Gr, Lobster Twp, NE Carry, Rainbow Twp, Seboomook TWP	Penobscot River Corridor	0	4,936	4,936
SOM	Dead River Twp	Bigelow Preserve	8,472	0	8,472
SOM	West Forks Plt	Moxie Falls	217	0	217
SOM	Seboomook Twp	Penobscot River Corridor (within the Seboomook Unit)	212	0	212

New Regional Recreation Opportunities – Public/Private Initiatives

In the greater region broadly defined as within a 50-mile radius from the Seboomook Dam, there are both public and private initiatives to either develop additional recreational resources, or secure additional public recreational lands. These efforts are likely to increase recreational opportunities in the region, and to attract more use to the region.

“100 Mile Wilderness” Initiative - In December of 2003 Governor Baldacci laid out components of the “Maine Woods Legacy” initiative that would strengthen “the connection between economic health and conservation in the Maine Woods.” Part of that initiative included efforts focused on the “100 Mile Wilderness” section of the Appalachian Trail, in which local residents, businesses, economic development groups and conservation groups such as the Eastern Maine Development Corporation, the Maine Appalachian Trail community and the Sierra Club would work together to explore new opportunities throughout this region that would “enhance economic development, recreational access and land protection.” The effort has been supported by an economic study conducted by the University of Maine, Department of Resource Economics and Policy and the Eastern Maine Development Corporation.

Western Mountains Foundation Proposed Hut to Hut Multi-Use Trail - This proposal would establish a 180-mile trail corridor from Bethel to Brassua Lake, with the first phase centered on the northern end of the proposed system. It would be a four-season trail, for hiking, mountain biking, and cross-country skiing, and would include some water-based recreation opportunities. The proposal is still in its developmental stages.

Plum Creek’s “Gateway Lands in the Moosehead Lake Region” Resource Plan – submitted to the Land Use Regulation Commission in April of 2005, it was withdrawn after a series of public hearings and resubmitted a year later, in April of 2006. This Plan is a landscape level plan covering 426,000 acres of Plum Creek lands located in 29 townships surrounding Moosehead Lake. It proposes to create 975 new residential lots and two resorts, while placing about 400,000 acres under a conservation easement that would extinguish development rights but allow continued timber management.

Piscataquis Tourism Task Force: This Task Force was established to develop a tourism development implementation plan for Piscataquis County. It is composed of representatives of the following organizations: UM Cooperative Extension, Maine Highlands Corporation, Southern Piscataquis Chamber of Commerce, Moosehead Lake Region Chamber of Commerce, Town of Brownville, Town of Dover-Foxcroft, Town of Greenville, Piscataquis County government, and the PCEDC-Cultural Heritage Ecotourism Committee. In 2003-2004 this Task Force participated in the development of a survey of attitudes about nature-based and cultural-heritage tourism in Piscataquis County, conducted by researchers from the University of Maine in 2004. A total of 402 residents and 207 businesses responded to the survey. A report on the survey entitled ***Nature-Based and Cultural-Heritage Tourism in Piscataquis County – Survey Analysis*** is available online at http://www.umaine.edu/mcsc/Research/EcoDev_menu.htm

The following excerpts some of the findings:

- In general, respondents felt more favorably toward increases in non-motorized activities than motorized ones.
- Over half of respondents would like to see increases in current levels of camping and hiking (59.2%), cross-country skiing (53.3%), and kayaking and canoeing (50.4%). Of over 370 respondents, only 3 indicated that they would like to see less of those activities.
- Almost half of respondents (49.3%) want snowmobiling to remain at its current level, while 25.6% wanted it to increase, and 15.7% wanted it to decrease.
- ATV-riding is the only activity that a plurality of respondents (39.3%) would like to see decrease in coming years. Only 18.0% want ATV-riding to increase, and 30.5% prefer it to remain at the current level.

Maine Nature Tourism Initiative: In September 2004 the Maine Department of Economic and Community Development (DECD) commissioned a study to assess Maine's opportunities in nature-based tourism. A nationally-known experiential tourism development consulting firm, FERMATA, Inc. worked with state agency representatives, members of various state level organizations, and stakeholders in three rural pilot areas, one of which was the Maine Highlands region, an area that includes the Seboomook Unit. FERMATA, Inc. identified sites of interest for tourism itineraries – identified routes for tourist guides. Big Spencer Mountain and Pittston Farm were among those sites of interest. This information was collected in collaboration with the Piscataquis Tourism Task Force. One of the recommendations for carrying this work forward was to “strengthen the appeal of the local region as a recreational destination with a rich cultural and natural history.”

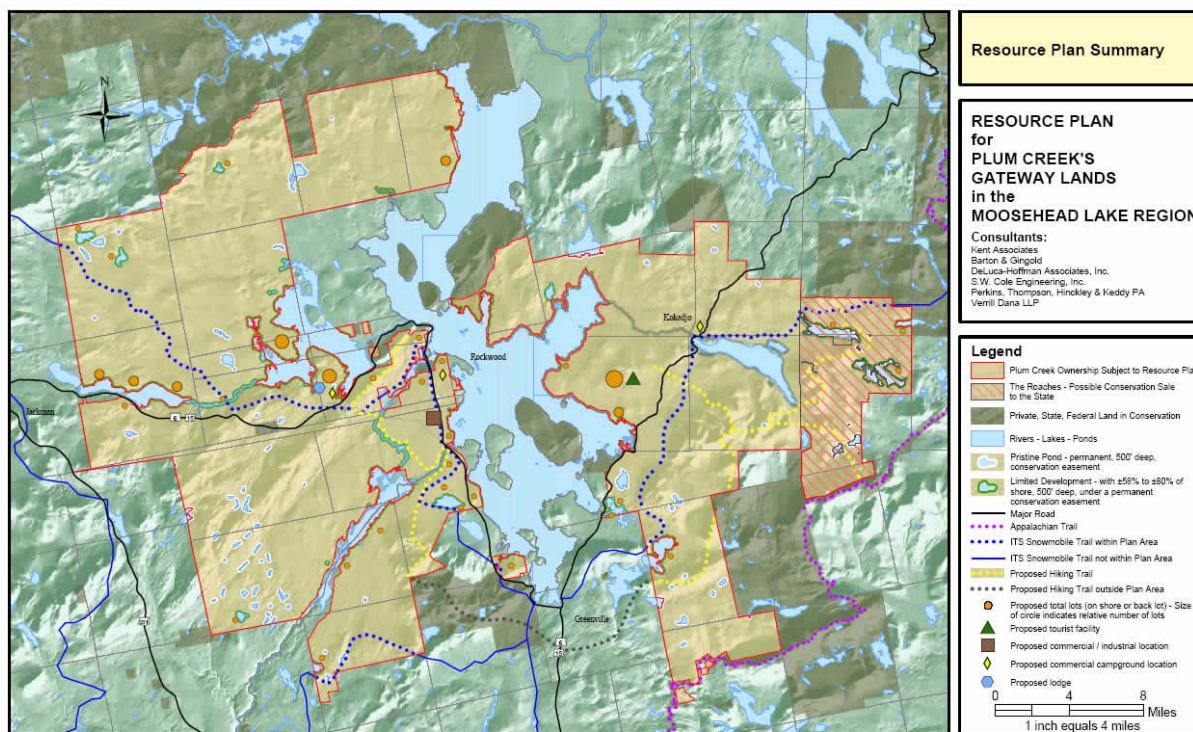


Figure 4: Plum Creek Proposed Moosehead Concept Plan

Trends in Recreation Use in the State and Region

North Maine Woods System: Recreation use of the North Maine Woods system has shown a declining trend since the mid-1990's. In 1999 the West Branch region, including the Seboomook Unit lands, was added to the NMW system, and use jumped from 181,814 visitor-days to 297,266 visitor-days, but use has since declined steadily to 231,914 visitor days in 2005. Use through the 20-Mile gate, at the entrance to the Seboomook Unit, was 42,227 visitor-days in 2005, following a steady decline from 59,218 in 2000. All of the above figures are for spring through fall use; there are no data for winter recreational use in the NMW system.

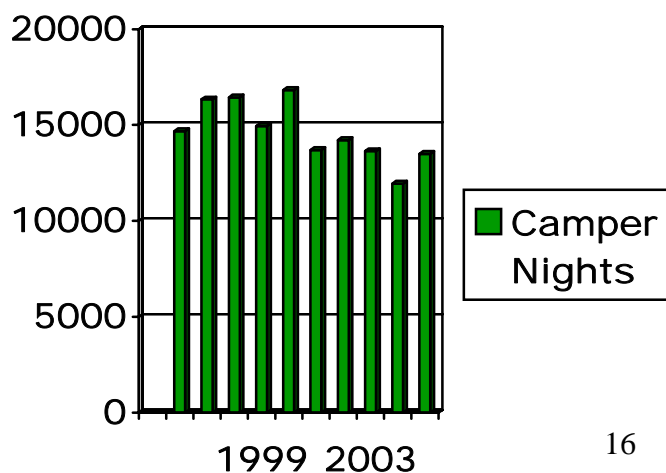
State Parks: Day use to Maine State Parks increased from 1.75 day use visits in 1993 to 2.32 million visits in 2001, and declined thereafter. In 2004 use was 1.97 million visits. Camper nights at state park campgrounds followed a similar trend, increasing from 208,000 nights in 1993 to 253,000 in 2002, declining over the past few years to 226,000 in 2005. A decline in economic conditions after 2001 likely contributed to the decline in use that followed an eight-year increasing trend.

Penobscot River Corridor: Use of the Penobscot River Corridor (primarily rafting in the Lower West Branch Penobscot and canoe trips in the Upper West Branch) has fluctuated depending on weather and economic conditions. During strong economic conditions, from 1996 to 2000 camper-nights fluctuated roughly between 14,500 and 16,500; since 2001 it has fluctuated between 12,000 and 14,500 (see below).

Snowmobile Registrations: In contrast, snowmobiling has increased as reflected in snowmobile registrations. The Maine Snowmobile Association reports registrations of 80,833 in 2001, and over 100,000 in 2004. Registrations were down in 2005 due to an abnormally warm winter with little snow.

All-Terrain Vehicle Registrations: Similarly, ATV registrations are rising, from 45,337 in 2001 to 59,057 in 2004. ATV's are not allowed in the North Maine Woods system, but there is interest in a Moosehead Loop trail similar to the existing snowmobile trail around Moosehead Lake, which passes through the Seboomook parcel.

**Ten Year Camping Use
PENOBSCOT RIVER CORRIDOR**



- ★ 1996 = 14624
- ★ 1997 = 16336
- ★ 1998 = 16440
- ★ 1999 = 14945
- ★ 2000 = 16825
- ★ 2001 = 13694
- ★ 2002 = 14215
- ★ 2003 = 13634
- ★ 2004 = 11942
- ★ 2005 = 13489

Summary of Planning Implications

1. The Seboomook Unit is located in a **semi-remote region**, at the edge of the vast North Maine Woods system. The 20-Mile gate, located at the entrance to the Unit, is the “gateway” to the western region of the North Maine Woods, including, notably, the start of the St. John River canoe trip and Penobscot River Corridor.
2. The Seboomook Unit’s **unique recreation values** stem from the combination of the backcountry recreational opportunities it provides, and the availability of a range of accommodations on the Unit or at private establishments within the Unit. The Seboomook Unit includes significant wildlife habitat, a prized wild trout and land-locked salmon fishery, remote headwaters ponds, unusual whitewater boating opportunities, and an opportunity to snowmobile in the North Maine Woods, where groomed trails are rare. Further, the Unit surrounds a historic farm that once was the center of operations for Great Northern Paper Company, and was an important area for prehistoric populations. Visitors may choose from a number of primitive campsites at the Unit, nearly all of which are located on lakes or rivers, may stay at either of the two commercial establishments embedded in the Unit which provide tent, cabin or RV options- Historic Pittston Farm on Seboomook Lake, or Seboomook Wilderness Campground on Moosehead Lake.
3. The Seboomook Unit, with its many high value recreational opportunities, its accessibility, and its proximity a major new development proposal (Plum Creek’s Moosehead Lake Region Concept Plan), is **likely to become a major recreation destination**.
4. There are many **opportunities for development of public-private partnerships** on this Unit, including partnerships with North Maine Woods, Pittston Farm and Seboomook Campground, and Brookfield Power.
5. The configuration of public uses and the intersection of the Penobscot River Corridor (Park) with this Public Reserved Lands Unit offer an opportunity for the Bureau to develop a **new blended “Parks” and “Lands” management model** for this Unit.

IV. Character and Resources of the Seboomook Unit

Overview

Semi-Remote Character: The Seboomook Unit lies at the edge of Maine's northern forest area, a largely undeveloped region that occupies the northern half of the state and is part of a northern forest region stretching from the Adirondacks in New York to the Canadian maritime provinces. This area forms what some call the largest undeveloped landscape east of the Mississippi. A substantial portion of the area is owned by large private timber management holdings, and has been actively managed for timber since the 1800's. Since the late 1960's when use of the region's waterways for log runs ended, the north Maine woods, including the Seboomook Region, has been laced with a network of logging roads.

Hydrology: Lands in the Seboomook Unit include parts of the headwaters to three of Maine's major waterways: the Penobscot, St. John, and Kennebec Rivers. The units encompass several headwaters lakes and ponds in the St. John drainage, including Baker Lake, Upper First St. John Pond, Lower First St. John Pond, Second St. John Pond, and Robinson Pond. It also includes significant ownership around two lakes in the headwaters region of the Penobscot River drainage - Seboomook Lake and Canada Falls Lake. Finally, the Unit includes a significant length of the north shore of Moosehead Lake, the headwaters for the Kennebec River.



Seboomook Lake (BP&L photo)

It is interesting to note that Moosehead Lake, formed after the glacier receded about 11,000 years ago, originally drained into the Penobscot River drainage through an outlet at the north end of the lake, now an extensive bog/wetland complex. About 8,700 years ago the land rose in that area, as the land rebounded from the weight of the glacier, and the drainage pattern shifted to the current outlet of the lake, the East Outlet, which drains to the Kennebec River (Spiess, 2004).

While the headwaters of the St. John River are completely uncontrolled, both the Penobscot and Kennebec River headwater lakes are controlled by dams operated for storage for downstream hydroelectric facilities (at the Ripogenus Dam in the case of the Penobscot River and at Indian Pond on the Kennebec River). These headwater storage projects have been recently relicensed by the Federal Energy Regulatory Commission with the Moosehead Project [FERC No. 2671] license order dated November 25, 1997, effective for 39 years and the West Branch Storage Project [FERC No. 2634] license dated December 24, 2004, effective for 50 years.

Natural Communities and Ecology: Encompassed within the 51,245 acres of the Seboomook Unit are many of the important ecological features of the Seboomook area, including lakes and associated large wetlands, montane krummholz communities, spruce-fir and northern hardwood forests, and a number of rare plant and animal species. The chart below summarizes some of the key acreage information for the unit.

Seboomook Unit by Parcel	Total Acreage	Forested Wetland (ac)	Open Wetland (ac)	Open Water Acreage	Wading Bird Habitat (ac)	Deer Wintering Areas (ac)
Baker Lake	1,650	172	263	1,252	428	0
Big Spencer	4,242	15	26	0	30	0
Seboomook/ Canada Falls	41,436	1,769	1,318	6,838/	1,767	3,220
St. John Ponds	3,917	199	333	497	600	0
Total	51,245	2,155	1,940	8,791	2,825	3,220
Source: Maine Natural Areas Program, Natural Resource Inventory (Wilkerson, 2005)						



Seboomook Lake (BP&L photo)

Forest Resources: Common forest types in the region include spruce-fir forests and northern hardwood forests. The spruce-fir forests tend to occur on broad wet flats and often fit the natural community description for a Spruce – Fir – Cinnamon Fern Forest. Spruce-fir forests also occur on low hills in the region and tend to form the matrix forest in the region. Hardwood forests are often embedded in the spruce-fir matrix. Drier sites often support beech, while moister areas host sugar maple and yellow birch.



Aerial photo over the West Branch, looking towards Moosehead Lake, showing areas of recent harvests. BP&L Photo

The Seboomook parcel is 97 percent wooded with 21 percent softwood, 30 percent hardwood, and the remainder in mixed wood. The Canada Falls parcel is dominated by softwoods, predominantly spruce (70 percent).

The vast majority of Big Spencer Mountain is forested with tolerant hardwoods, with nearly 25% of its 4,242 acres in ledge or sub-alpine fir. The St. John Ponds parcel has a high percentage of sugar maple. Baker Lake is about half softwoods, and half hardwoods.

In addition to harvesting by commercial timber interests, natural disturbances in the area have helped shape the forest. In hardwood communities, the dominant natural disturbance tends to occur as small gaps from ice, windthrow, or natural tree mortality. Small-scale fires, most often caused by lightening strikes, are another common disturbance in the northern forest. Fires on parts of the Seboomook unit in the last century produced even-aged stands of aspen (*Populus spp.*), a fast-growing species that often quickly regenerates after a fire. Fire can be a significant influence in spruce-fir flats, often producing even-aged, single story stands. The twisted, stunted trees on top of Big Spencer Mountain result from exposure to high winds, ice, and cold temperatures.



South Branch of the Penobscot River – BP&L photo

The following summarizes the average timber volumes on the Seboomook parcel as compared to other BP&L lands and lands statewide and in Somerset County. Relative to the Seboomook parcel, timber volumes on the Canada Falls parcel are slightly higher, and Big Spencer Mountain, which includes a mature northern hardwood stand, is significantly higher; while the St. John Ponds and Baker Lake parcels are significantly lower.

<i>Standing Timber Volumes per Acre</i>	
BP&L**	
All actively managed lands 1999	20.9
Seboomook Parcel 2001*	15.6
Statewide 1995 USDA data**	14.5
Somerset County 1995 USDA data	13.8
* BP&L estimate based on Wagner data.	
**"Statewide" is limited to the seven northerly "regions" used for the USDA Forest Service inventory, omitting the Capitol and Casco Bay regions.	

Historic and Cultural Resources: The rich history of the Seboomook Unit dates back to the earliest use of the area by Native Americans, more than 10,000 years ago. It is likely this area was used seasonally, due to the harsh climate, and evidence of its use is generally thought to be associated with campsites located along the rivers and streams as travel corridors and fishing areas. These areas have been heavily scoured by logging drives, or inundated by dams, so that whatever remains is likely a small portion of what was once a rich physical record of this early pre-historical period. In addition, we know that the Penobscot Indian Nation has continuously used this area, which is part of their historic homeland - the Penobscot River drainage - for thousands of years (Clark et. al., 1998).

The area has had a long history of use by logging interests. Starting in the mid-1800s the legislature to begin granting charters to various groups of individuals to build dams in northern Maine in recognition of the importance of the logging industry to the Maine economy. At the turn of the century, Great Northern Paper established its Millinocket mill and began acquiring rights to the many small dams on the waterways of the Penobscot River. Pittston Farm was established sometime between 1850 and 1879, and was purchased by Great Northern Paper Company in 1906, when it became the center of its operations in the western Penobscot region.



Seboomook and Canada Falls Parcels

Character of the Land Base: The 41,4363 acre Seboomook Lake – Canada Falls parcel is by far the largest BP&L unit in the region, including a large block the surrounds Seboomook Lake (40,583 acres) and a shoreline strip on the eastern and northern shorelines of Canada Falls Lake and along the South Branch of the Penobscot River (853 acres) that varies in width generally between 250 and 500 feet (Map). The block of land between the two main arms of the Canada Falls Lake is Passamaquoddy Tribal Trust land (land held in Trust for the Passamaquoddy Tribe by the U. S. Department of Interior). Merriweather, LLC owns the lands beyond the state-owned lands in the Seboomook and Canada Falls parcel, subject to a conservation and public access easement held by the Forest Society of Maine and negotiated as part of the West Branch Conservation Project. Both Canada Falls Lake and Seboomook Lake are largely undeveloped, with only four private camp lots on Canada Falls Lake and seven private camp lots on Seboomook Lake. The lakes are scenic with high recreation value, and lodging and camping are available along the lakeshore. The surrounding uplands have been harvested heavily over the preceding decades.

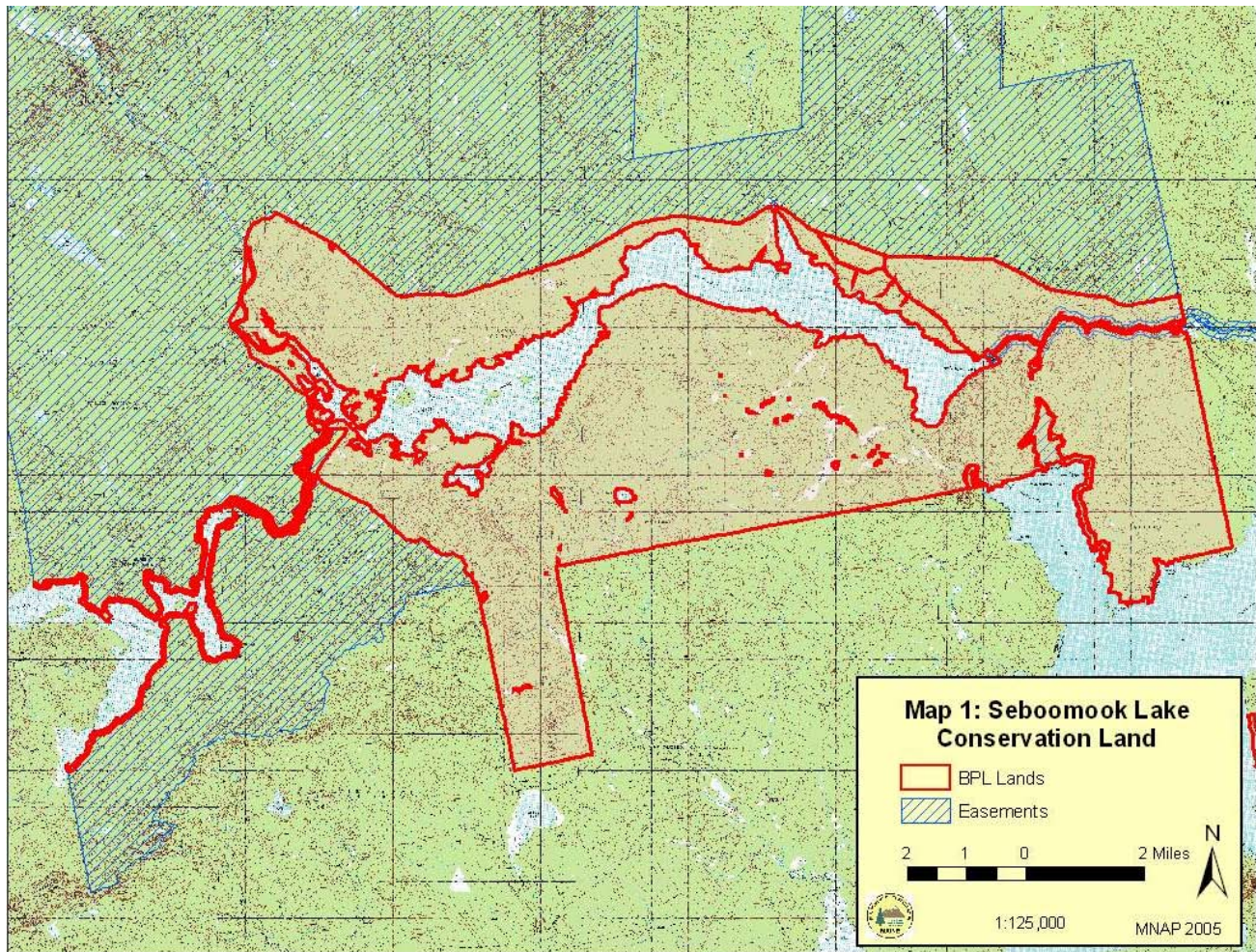


Figure 5: Seboomook-Canada Falls Parcel



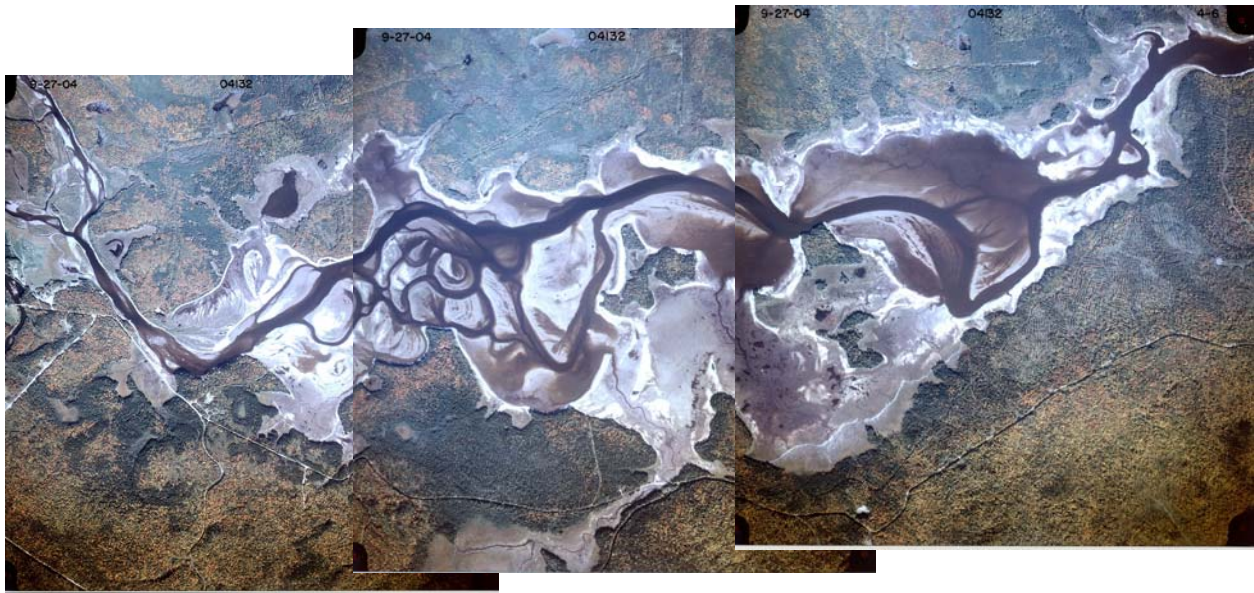
Pittston Farm on Seboomook Lake at the confluence of the North and South Branches – MNAP photo

Natural Resources:

Geology and Soils: The Seboomook and Canada Falls Lake parcel is underlain with distinctly layered, mildly metamorphosed sedimentary rocks along with a small amount of volcanic rocks. The vast majority of this glacial till was deposited during the last glaciation. Soils in the Seboomook unit range from poorly drained to somewhat excessively drained. In most cases the soils have their origins in dense glacial till, but some soils – especially on the western half of the lake – are derived from glaciofluvial deposits such as outwash plains, deltas, and eskers.

Hydrology and Water Quality: Seboomook Lake is a totally artificial lake, created as an impoundment on the West Branch of the Penobscot River for log driving purposes. The existing Seboomook dam, at the east end of Seboomook Lake, was constructed in 1936, replacing a series of four earlier timber dams. At full pond the lake surface area is 6,838 acres and the storage capacity is approximately 5.1 billion cubic feet. The drainage area, including Canada Falls Lake, is 526 square miles. Present operation is store and release, and the lake is normally drawn down by December each winter to provide safe storage for any winter runoff and spring snow melt.

Seboomook Lake West Bay Fall- 2004



Seboomook Lake is 12 miles long, and a constriction in the middle of the lake divides it into two distinct basins. Maximum depth is 20 feet for the western (upper) basin and 52 feet for the eastern (lower) basin. The upper basin is shallow with numerous islands and coves. Most of the major tributaries to the lake are located in the upper basin. When the lake is drawn down more than about 10 feet, the upper basin becomes riverine with braided channels.

The deeper and larger lower basin maintains a large pool area even at maximum drawdown. There are only a few small islands in the lower basin, though many areas have gravel and boulder substrates. The southern shore also contains a long ledge outcropping. Seboomook Lake. Secchi disc visibility extends to a depth of 7.9 to 11.2 feet (2.4 to 3.42 meters).

Canada Falls Lake, like Seboomook, is a riverine impoundment, with finger-like arms. From the dam at Canada Falls Lake, the lake follows what is essentially a widened river channel before branching into arms that follow the South Branch and two old tributaries – Bog Brook and Alder Brook. Huge masses of driki armor the heads of each of the arms and this is also true for much of the southern shoreline where driki extends more than 164 feet (50 m) out from the modern shoreline in some places. Some erosion occurs along the north shore of the lake where the banks are steeper. Navigation at low water is challenging due to the degree of channel meandering. The terrain in the upland is level to gradually sloping into the upland.

The existing dam was constructed in 1921, downstream from a previous dam. The dam had major repairs and improvements completed in 1982. The lake has a surface area of 2,521 acres. At full pond, Canada Falls Lake's elevation is 1,238 feet. Maximum depth is 26 feet, and average depth is 10 feet. Secchi disc visibility extends to a depth of 4.2 to 7.4 feet (1.27 to 2.25 meters).

The Canada Falls dam, Seboomook dam, and Moosehead Lake dams are controlled in accordance with licenses issued by the Federal Energy Regulation Commission (FERC). The following is a summary of the water management provisions of these licenses:

- According to the Moosehead license (issued in 1997 and effective for 39 years), water levels on Moosehead Lake may be drawn down by a maximum of 4.5 feet.
- The new license for the West Branch Storage Project (issued in December of 2004, effective 50 years) includes new provisions on the timing and extent of lake drawdowns, minimum flows for the rivers below the dams, and provision of recreational (whitewater) boating flows and affects Seboomook Lake, Canada Falls Lake, the South Branch of the Penobscot River, the North Branch of the Penobscot River, and the West Branch of the Penobscot River. Full implementation of the new water management regime, specifically winter drawdown limits, is pending a final safety analysis and approval by FERC.

Lake water management will avoid or minimize the impact on aquatic life by limiting the magnitude and duration of the drawdowns and by controlling the timing of the drawdowns.

- Canada Falls Lake will be managed for a near-natural lake level regime. Maximum drawdown for the lake, effective upon completion of an engineering safety assessment, will be 3.5 feet compared to 26 feet in the past, which will provide maximum habitat in the Canada Falls reservoir for the native brook trout fishery, and will result in more robust emergent and aquatic bed wetlands, and associated wildlife.
- Maximum drawdown at Seboomook Lake under the new license, effective upon completion of an engineering safety assessment, will be 17 feet compared to typically 33 feet in the past, and will not occur until winter. Drawdown will occur gradually beginning in mid-summer, and accelerated in the fall to meet fishery management goals (see below). While this will continue to dewater the upper basin during the late fall until early spring, in the lower basin there will be a significant increase in water retained for overwintering brook trout habitat.
- Both lakes will be managed for relatively stable levels during the waterfowl and loon nesting season (May 15 through July 15), followed by a gradual drawdown to the winter gate settings, which will enhance wetland development and fall shore feeding opportunities for migrating birds.

South and West Branch River flow regulation under the new license will provide fishery and recreational boating flow enhancements in the South Branch and West Branch from July 15 to the winter gate setting, with particular emphasis on maintaining high quality spawning and rearing habitat for salmon and brook trout in the West Branch, and recreational boating flows on the South Branch.

- Minimum flows below Seboomook dam will increase from 150 cubic feet per second (cfs) to 500 cfs to support fisheries and minimum recreational boating flows.
- Flows below Seboomook dam will be increased to typically between 750 and 1,250 cfs between September 1 and October 14 for fish attraction (attracting salmon from Chesuncook Lake into the West Branch for fall spawning), angling, and recreational boating.



South Branch of the Penobscot River – photo courtesy of Jim Clark at TRC

- There will be one whitewater boating flow release of 1500 cfs below Seboomook dam on the Saturday of Labor Day weekend.
- Minimum flows below Canada Falls dam will increase from 50 cfs to 75 cfs to support aquatic habitat.
- Scheduled whitewater boating releases on the South Branch ranging from 500 to 900 cfs will take place every Saturday beginning in July and lasting through September 15.

North Branch River flow augmentation: There will also be a fall flow release from Long and Dole Ponds into the North Branch of the Penobscot River (about 100 cfs flow augmentation throughout September) to provide another fall big river salmon fishery, which is rare in this area. This flow augmentation will start in the fall of 2006.

Wetlands: The Seboomook and Canada Falls Lake parcel contains 1,769 acres of forested wetlands and 1,318 acres of open wetlands, not including areas that are exposed during low lake levels (Map 3). This includes a significant amount of wading bird habitat. The largest wetland complex is Carry Bog, in the southeast part of the unit. This wetland was once the original outlet of Moosehead Lake, when it drained into the West Branch of the Penobscot River.

Ecological Processes: As with other areas in the region, spruce budworm has played a prominent role in forest disturbance on the Seboomook parcel. By preferentially selecting balsam fir as its host, spruce budworm effectively decreased the amount and quality of fir on the unit.

Beavers are the dominant influence in many of the palustrine wetlands in the unit, such as Carry Bog. Beavers build dams to give them safe access to the hardwoods they prefer to eat. When active, beaver ponds flood adjoining uplands, enlarging wetlands and creating new areas for wetland species to colonize. Once the hardwoods within a safe distance of the pond are gone, beavers often abandon their dam and build a new dam in a different location. These abandoned

ponds typically slowly fill with sediment and transition from marshy wetlands back to uplands. By creating and abandoning impoundments along the stream course, beavers create a mosaic of habitats for other plant and wildlife species.

The hydroelectric storage dams on the unit cause large winter drawdowns – up to 17 feet in the case of Seboomook dam. Observations on other large, impounded lakes indicate that vegetation dynamics in dammed lakes are vastly different than in relatively undisturbed lakes (Don Cameron, MNAP). Fluctuating water levels can also be disruptive to animals; this is discussed further in the Fisheries and Wildlife section.

Rare Plant and Animal Species: A number of rare plant species are known from the Seboomook unit. These include water starwort (*Callitriche heterophylla*), Orono sedge (*Carex oronensis*), swamp-fly honeysuckle (*Lonicera oblongifolia*), Wiegand's sedge (*Carex wiegandii*), and northern fir-moss (*Huperzia selago*).

Two bald eagle nesting sites are known from the unit. Both nests were used actively in 2004 by breeding pairs that successfully produced young.

Creepers, a small mussel species of special concern, are found in two locations in the unit. This small mussel is found only in streams and rivers in Maine, though in other areas it has been reported living in lakes.

Extra-striped snaketail and broadtailed shadowdragon, dragonflies designated as special concern species, are found along the outflow of Seboomook Lake.

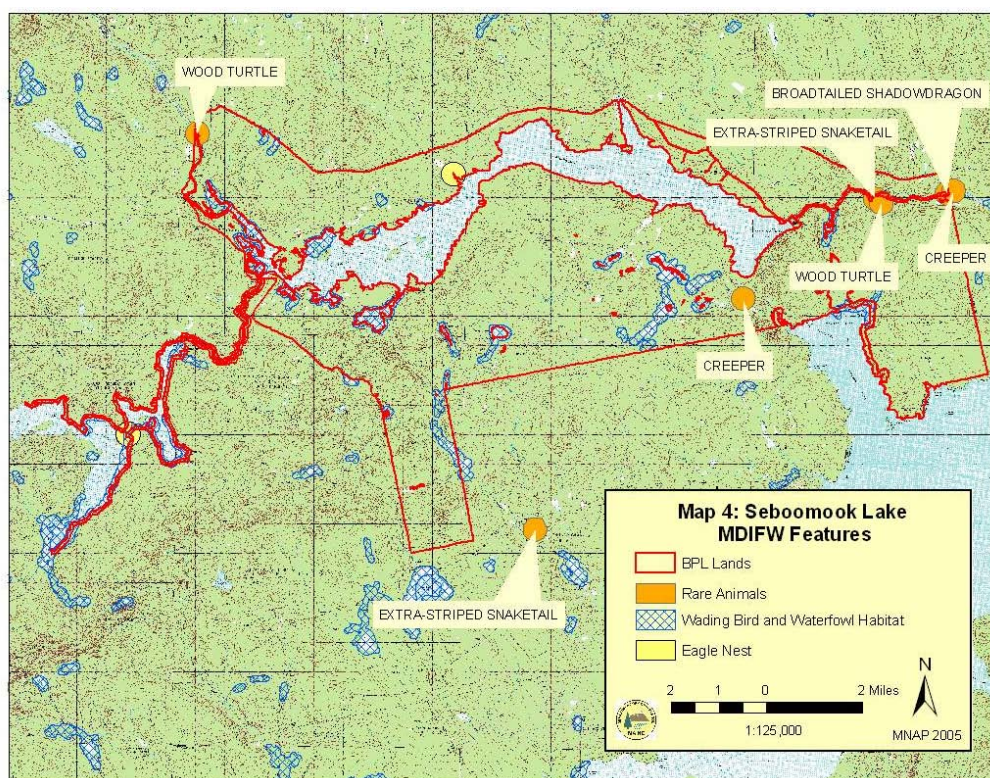


Figure 6: Rare Plant and Animal Species

Wood turtles, considered of special concern, have been found on the Seboomook unit. Wood turtles are declining throughout their range, with Maine harboring some of the largest and most viable populations in the U.S. One of the greatest threats to Maine's wood turtle populations is illegal collection for the pet trade; collectors can quickly decimate local populations.

Natural Communities: The area surrounding Seboomook Lake contains a wide range of upland, wetland, and aquatic communities. Three areas in the unit stand out as having state-wide significance: one natural community and two ecosystems.

- Exemplary Bulrush Beds found in a number of coves and shallow areas in the shallower western basin of the lake.
- A 215-acre exemplary Unpatterned Fen Ecosystem. The Carry Bog wetland complex is made up of a series of wetlands running west to east along Carry Brook, about a mile and a half south of the east end of Seboomook Lake. The wetlands are influenced by heavy past and current beaver activity, creating a mosaic of numerous natural community types, each of which is too small to be considered exemplary quality on its own. Collectively, however, the mosaic of forested and non-forested natural communities comprise an exemplary ecosystem. Natural communities included in this ecosystem are Mixed Graminoid Shrub Marsh, Northern White Cedar Seepage Forest, Water-Lily – Macrophyte Aquatic Bed, Spruce – Fir – Cinnamon Fern Forest, Sheep Laurel – Dwarf Shrub Bog, Spruce – Larch Wooded Bog, Mixed Tall Sedge Fen, and Sweet Gale – Mixed Shrub Fen.

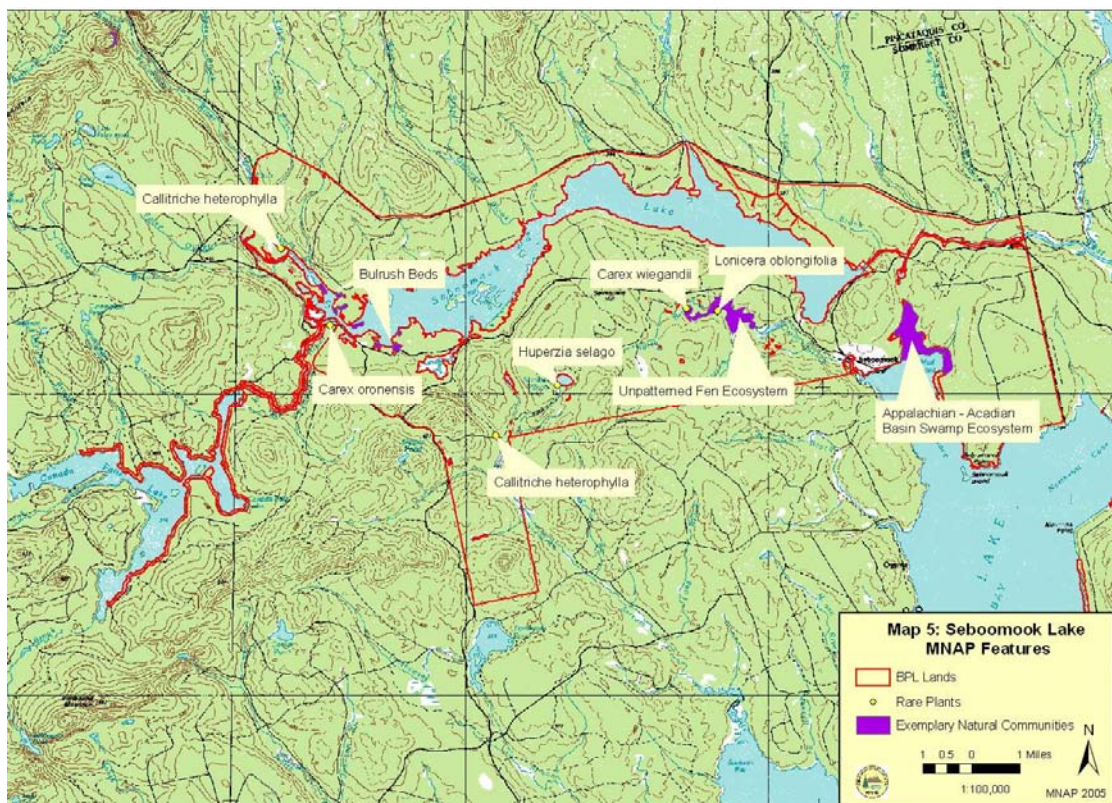


Figure 7: Exemplary Plant Communities and Ecosystems

- A 240-acre exemplary Appalachian-Acadian Basin Swamp Ecosystem is found north of Mud Cove in the Northwest Cove of Moosehead Lake. The large forested wetland includes closed canopy peatland areas alternately dominated by black spruce and northern white cedar. Along the subtle stream drainage, old beaver activity has created a more open canopy Northern White Cedar Woodland Fen. Most of the forested wetland has little to no signs of cutting, and a few cored cedar trees were 108 and 176 years old.

Other wetlands in the unit include Bluejoint Meadows and Alder Shrub Thickets along drainages such as Socatean Stream. Cedar Woodland Fens and Spruce – Larch Wooded Bogs can be found in wetland basins such as the abandoned river meander on the north side of the North Branch of the Penobscot River in the unit. Spruce – Fir – Cinnamon Fern Forests are a common forested wetland type in Seboomook, found near Socatean Pond, in the drainage north of Socatean Pond, and on Seboomook Point. Semi-enriched hardwood sites were also encountered frequently, especially in the unharvested stream buffers that intersect Seboomook Road. Typical sites have a canopy dominated by sugar maple with white ash, red spruce, and yellow birch also prominent.

Wildlife Resources: With an abundance of water and wetlands, the Seboomook Unit is home to a broad array of Maine’s well-known wildlife species. One species of heightened interest is the Common Loon, as federal funds from the North Cape oil spill settlement were used in part to purchase the unit. The North Cape oil spill settlement funds are intended to permanently protect loon nesting habitat as compensation for the loons killed by the spill. As a condition of the funding, new recreational facilities on state-owned lands within the Seboomook Unit are prohibited within 1,000 feet of a loon nesting site, and within the next 1,000 feet consent is required from the U.S. Fish and Wildlife Service (or the Maine Department of Inland Fisheries and Wildlife as its agent).

Studies by the BioDiversity Research Institute (BRI) conducted using loon mitigation funds in 2004 identified loon territories (inhabited by a pair of loons) and nest sites on Seboomook Lake, Canada Falls Lake, Moosehead Lake, and Baker Lake, and assessed productivity for that one season. The Biodiversity study noted that overall 2004 was a good year for loon chick production in the area assessed



(included 13 lakes in the general region of the West Branch conservation easement and state acquired lands in the Seboomook Unit), noting that productivity was lower on the managed reservoirs (including Seboomook and Canada Falls Lakes) than on the natural lakes, due to water level fluctuations. As noted in the Hydrology discussion, beginning this year, water levels will be maintained at relatively stable levels during the nesting season, and as a result, we can anticipate higher success rates for nesting loons in the future.

Wetland habitats on the unit provide important habitat for waterfowl and wading birds such as great blue heron, American bittern, black duck, mallard, Canada goose, ringneck duck and

common merganser. Songbirds frequently observed in or near wetlands are red-winged blackbird, common snipe, spotted sandpiper, tree swallow and swamp sparrow.

Beaver and muskrat are generally confined to the tributary rivers and streams because of the past substantial water level changes in Seboomook Lake, which leave lodges stranded and subject to predation. Continued substantial fall drawdowns on Seboomook Lake will remain a limiting factor for use by beaver and muskrat. However, more stable levels on Canada Falls Lake may increase the suitability of some riparian areas of this lake for beaver and muskrat. River otter, mink, coyote, fox, pine marten and many prey species of mice, shrews and voles are common to abundant on the unit.

Past timber harvesting has created habitat for a number of species, including moose, bear, grouse and woodcock. Grouse and woodcock are actively sought by hunters, especially early in the season. Moose, hunted in the fall, are abundant in this area but the lack of extensive clear-cuts will decrease habitat quality and population size over time. Black bear are also numerous on the unit and NMW previously administered a permit system for bear hunting. As with moose, the loss of early successional stage forest as the forest matures could result in a decline in habitat suitability for bear, unless management of the unit results in more quality beech stands.

The previous land manager, Wagner Forest Management Company, and the Maine Department of Inland Fisheries and Wildlife had executed a cooperative management agreement for approximately 5,400 acres of deer wintering area on the Seboomook unit. The lack of suitable winter shelter in this region limits deer populations below what the summer habitat can support. This area of Maine lies at the northern edge of Wildlife Management District 9, which is rated as having moderately severe winters (4 severe winters per decade) and the southern edge of Wildlife Management District 4, which has severe winters (9 severe winters per decade). Deer wintering areas declined precipitously after the salvage harvests that took place during the spruce budworm infestation. Increasing the amount of deer wintering habitat will help restore deer populations in the area.

Fisheries Resources: Brook trout are present in both lakes and comprise the bulk of the recreational fishery. Canada Falls Lake has a good wild brook trout population, which has been enhanced since 1994 by an agreement reached between the Maine Department of Inland Fisheries and Wildlife and Great Northern Paper Company (prior owner of the dams) to limit the winter drawdown on Canada Falls Lake to 11 feet instead of the allowable 26 feet. This resulted in a significantly larger population of wild brook trout in that lake. New restrictions that limit the drawdown to only 3.5 feet will substantially increase the habitat for this fish. Landlocked salmon and rainbow smelt have been stocked in both lakes with little success except for the smelt in Seboomook. Other species common to both lakes are lake chub, common shiner, blacknose dace, white sucker, longnose sucker and fallfish. Many of these species serve as alternate hosts for fresh water mussels. White perch and lake whitefish are absent from both water bodies. Maintenance of the dam at Seboomook Lake is important to avoid population of the upper watershed lakes with perch that compete with the native brook trout. For this same reason, MDIFW's management objectives do not include the development of fish passage facilities at the Seboomook dam.

The West Branch is a popular fall landlocked salmon fishery, with flows from Seboomook Lake ramped up during the month of September to attract fish from Chesuncook Lake (and simultaneously draw the Seboomook Lake level down in preparation for winter). In addition, there is a spring trout fishery in the South Branch, in part from drop-downs from Canada Falls Lake, and the West Branch is also a popular trout and salmon fishing area in the spring. New lake water level and river flow management regimes that began in the spring of 2005 should enhance the fisheries habitat within the Unit, particularly for native brook trout and landlocked salmon by providing minimum flows in the rivers that vary by season in accordance with the life stages of these species, and when winter drawdown limits are approved by FERC, by providing more overwintering habitat in the lakes.



West Branch of the Penobscot River – BP&L photo

Historic and Cultural Resources:

Nomenclature: Seboomook is an Abenaki word for “at or near the large stream.” Socatean Pond is based on another Abenaki word meaning “divided into two parts.” Three brooks flow into Seboomook Lake from the north. Nulhedus Stream is named from an Abenaki word meaning “falls on each side.” Logan Brook is named for its slow-moving water, while Gulliver Brook is named in reference to Jonathan Swift’s Gulliver from Gulliver’s Travels. Negro Brook at the west end of Seboomook Lake was named for an African American lumberman who cut logs there. Seven Mile Hill is named for its location, seven miles from Seboomook.

Prehistory: A report prepared on archaeological investigations in the Seboomook Unit region as part of the licensing effort for the Seboomook and Canada Falls dams (1998, Clark, J., E. Moore and R. Will, *Results of Phase I Archaeological Survey of the Storage Project [FERC No. 2634]*) describes the pre-historical context for the region. The report notes a number of artifacts have been found in the area over the course of several investigations by others conducted as early as 1914, which provide evidence of a long history of human presence in the region. The following are excerpts from that report:

Maine possesses an archaeological record of human activity that likely dates back more than 11,000 years ago. Archaeologists have divided this long record of prehistoric cultural history into three major periods (Paleo-Indian, 9,500 to 11,500 years ago; Archaic, 2,800 to 9,500 years ago, and Ceramic or Woodland, 500 to 2,800 years ago) . . . Archaeological remains from all three periods have been found within the project area.

Archaeological remains recovered from Seboomook Lake indicate that human activity occurred there for most, if not all, of Maine's cultural prehistory. This is not surprising given the fact that several major waterways are present in the project area that, not only would have offered important food resources to Native people, but also would have served as important transportation routes.

(In addition), a dark gray, fine-grained metasandstone has been identified within the Seboomook Formation which underlies a portion of the project area. . . dependent on quality, rock such as this could have been sought out for prehistoric tool making.

Maine's earliest inhabitants are referred to as Paleo-Indian. The Paleo-Indian Tradition is widespread throughout North America between 11,500 and 9,500 years ago and is believed to include the first migrants into the New World from Asia. Elsewhere, these immigrants relied on large game animals--many of which are now extinct--for food. . . . the discovery of a few fragmentary bone remains at early sites elsewhere in New England indicate that caribou may have played an important role in Paleo-Indian subsistence. It is also likely that available small mammals, birds, and fish were probably taken as food.

Paleo-Indian settlement pattern is characterized as one of small, temporary campsites. By the end of the Paleo-Indian period . . . the environment had undergone a transformation from mixed tundra/woodland to forest that contained, among other tree species, white pine, and oak.

Very few Late Paleo-Indian Tradition sites have been found until recently. One site within the project area near Pittston Farm at the west end of Seboomook Lake also contains Late Paleo-Indian remains . . . Another artifact fragment discovered during (this) Phase I on Canada Falls Lake is also associated with the Late Paleo-Indian period.

Other artifact finds show that people used the Seboomook Lake area during the Archaic Period (c. 9,500 to 2,800 years ago) and the Ceramic (Woodland) Period (c. 2,800 to 500 years ago).

. . . during the Early and Middle Archaic periods (between 9,500 and 6,000 years ago). . . forests continued to expand in Maine and changed from largely coniferous species to forests of mixed hardwoods and softwoods. . . . The inferred settlement and subsistence pattern for the Early Archaic suggests that small groups of nomadic hunters and gatherers continued to live in Maine and possessed a much more diversified economy than their Paleo-Indian ancestors. . . The first cemetery sites known in Maine appear in this time period. They include burials sprinkled with red ochre and grave offerings of ground stone tools including woodworking gouges, slate spear points, and ground stone rods.

The Late Archaic period . . from 6,000 years ago to 2,800 years ago, . . experienced many changes in forest composition and in the kinds of wild food plants and animals available for gathering and hunting. Habitation sites--many of them covering thousands of square meters--are also recorded from a variety of locations including coastal shell middens, lake margins, and along large and small waterways.

The introduction of pottery-making into Maine Indian culture signifies the beginning of what archaeologists in Maine call the Ceramic period. . . Ceramics first appear in the archaeological record of Maine about 2,800 years ago and persisted until European contact. Aboriginal ceramics and other diagnostic Ceramic Period artifacts have been recovered from the project area. However, due to the cool climate, it is improbable that any food growing by prehistoric Native peoples occurred in the project area.

In a report summarizing archaeological research conducted as part of the West Branch Project acquisition (Spiess, 2004), it is noted that the West Branch of the Penobscot was part of a well-known canoe route to Quebec incorporated into surveys of Maine in 1761 and 1764, following Native American canoe routes. Two portage carries between the Kennebec and Penobscot Rivers, located at the north end of Moosehead Lake, were used by early Native Americans (and are still used by canoeists today): the Northeast Carry, in the township of the same name, and the Northwest Carry, in Seboomook Township. By 1847 the Northeast Carry route included a 2 mile wooden track railway pulled by draft animals, as well as portage.

Historical Use of the Area for Logging Operations: Starting in the mid-1800s the legislature began granting charters to various groups of individuals to build dams in northern Maine in recognition of the importance of the logging industry to the Maine economy. These early dams were commonly timber crib and/or earthen fill structures that were prone to rot and washed out frequently. By the turn of the century, when Great Northern Paper established its Millinocket mill and began acquiring rights to many of these small dams, some had already undergone numerous episodes of breaching and rebuilding. In 1870, a charter was granted to the Canada Falls Dam Company; while the Seboomook Dam was chartered in 1893. These dams were later rebuilt to serve as hydropower storage dams.

Pittston Farm was established sometime between 1850 and 1879, and was purchased by Great Northern Paper Company in 1906, after which it was expanded to include over 100 acres and serve Great Northern's timber operations. Barns housed over 100 horses and held over 300 tons of hay. The complex included a blacksmith shop, pump house, ice house, grain storage for 6,000 bushels, a potato storage house for 6,750 bushels of vegetables, and eventually included a boarding house for 40 men, a 50 seat dining hall, and hospital facilities.



Pittston Farm 1914 – Great Northern Paper Co. archives

After mechanical tractors replaced horses, and rivers ceased to be used for log drives, the farm gradually changed to a sporting camp serving hunters, anglers, and outdoor enthusiasts. The farm was not included in the state acquisition of the Seboomook Unit, but its role as a historic site and destination for recreationists is intimately linked with the Seboomook Unit.

History of Seboomook Landing: Seboomook Landing, at the northwest corner of Moosehead Lake, while not within the Seboomook Unit, is part of the rich history of this area. Developed as an elite resort in the early 1800's, it was reached via steamship out of Greenville. It included quite a complex of buildings at one time, which were later used as a prisoner of war camp during World War II, where German prisoners (some from Rommel's elite Africa corps) worked in the timber industry in the region. Today those historic structures are gone, and Seboomook Landing is the site of a private campground.

History of Seboomook Lake Dam: The Seboomook Lake dam was chartered in 1893. The first dam was a timber crib structure with an 18 foot head that was replaced in 1912 by a larger timber dam with a 28 foot head. Another dam was built downstream of the 1912 dam in 1926. Great Northern Paper Company built the existing concrete dam in 1936 and the last major repair work was made in 1988 (Clark, Moore and Will, 1998).

The construction of the earlier timber crib dams entailed a major effort, as described below (excerpted from Clark, Moore and Will, 1998):

Alfred Greer Hempsted, in his comprehensive history of lumbering in the West Branch area, described the 1926 construction of the Seboomook dam.

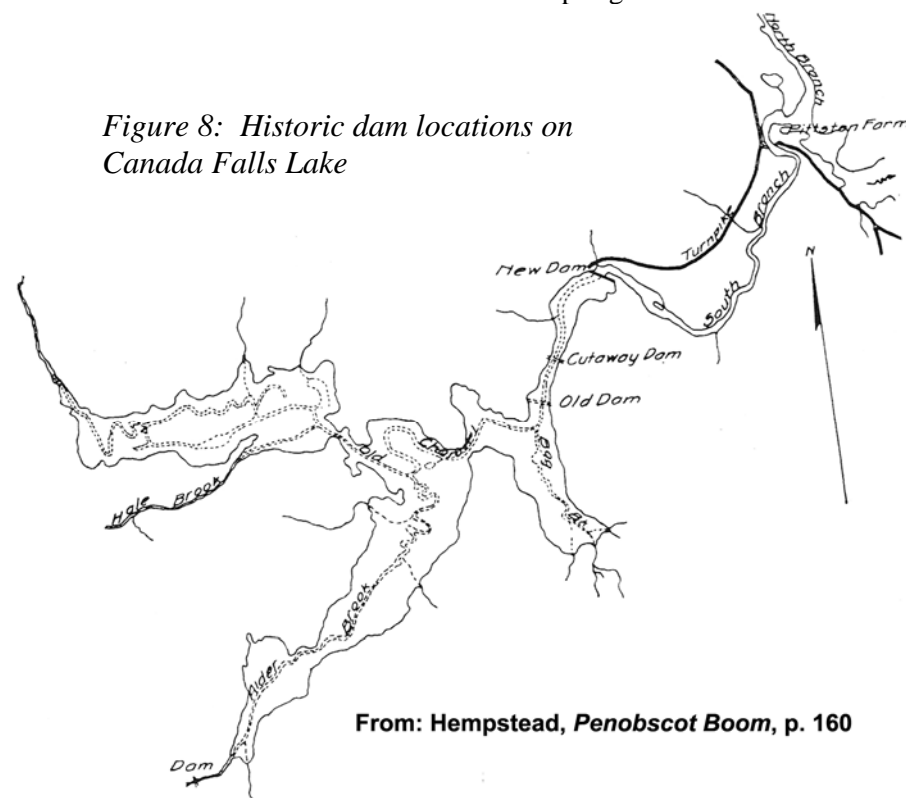
The first timber of the...dam was laid on October 25, 1926, and the dam was ready for the spring drives. Some idea of the amount of work done in that period can be gathered from the amount of material used. It is estimated that 1,000,000 board feet of timber, 14,000 cubic yards of rock, 21,000 board feet of hard pine for the gates, and 25 tons of iron were used. [The dam] is built on solid ledge which necessitated the removal of 2,500 cubic yards of seamy and loose ledge, which was later used for ballast...An Ingersoll Rand compressor was used in the nearby quarry for getting out rock for ballast. The timber used was...cut at Nigger Brook Camp...and at Burbank [Stream]...C. J. Sargent was in charge of hauling the timber to the dam...To accommodate the 150 men and 20 horses needed in the construction of the dam, it was necessary to build a set of camps. They were constructed on the north bank of the river opposite the boom house. The camps were all made of boards and covered with tar paper; no logs were used. The set of camps consisted of two bunk houses, a cook room, an office and foreman's room, a filer's camp and wash room, a blacksmith's shop, a tool house, a dynamite house, a garage, and a hovel with a hay shed in the center. (Hempsted 1931: 71-75).

From its earliest construction, booms at Seboomook Dam sorted timber from the upper part of the West Branch. By releasing water from the dam, operators could drive logs though a canal into Carry Pond to within one thousand feet of the highest point between Penobscot and Kennebec waters. There, two steam-powered chains, each 600 feet long and built in 1893, towed them over the height and dropped them into a wooden sluiceway that ran the two miles down to Carry Brook. From there, the brook's waters moved them to Moosehead Lake where they could be boomed and towed down the lake to East Outlet. Then the logs were driven down the Kennebec River to lumber mills and manufacturing plants all along the Kennebec. This chain

and sluiceway system operated until Great Northern Paper bought the dam company in 1926. In an average year, the system moved eight to ten million board feet.

History of Canada Falls Dam: The Canada Falls Dam lies west of Seboomook Lake on the South Branch of the Penobscot River. A series of dams were constructed on the South Branch, the earliest upstream of the present dam, which failed and were replaced numerous times. The early history of the Canada Falls Dam is provided by Clark, Moore and Will, 1998:

In 1870, a charter was granted to the Canada Falls Dam Company and two structures were built -- a dam 0.5 miles below Bog Brook and a roll dam just below the present-day dam (letter from Brian Stetson to Earle Shettleworth, April 18, 1996). Both of these structures were subsequently washed out. In 1890, another dam was built which washed out the following spring. It was rebuilt in the fall of 1891 and washed out once more in the spring of 1892.



In 1912-13 a new dam with a 26-foot head of water flooded the region behind it, creating the Canada Falls Deadwater. By backing up this water and releasing it at the time of drives, it would exert enough pressure to drive logs to the Seboomook Dam operation. In 1922, the Canada Falls Dam Company built a concrete dam about 100 feet downstream eventually replacing the wooden dam; which was purchased and improved by the Great Northern Paper Company in 1926-27.

Great Northern made extensive repairs to the concrete dam in 1982. The dam is now owned by Brookfield Power LLC, a division of Great Lakes Hydro America, which purchased Great Northern's hydropower assets in 2002.

In the 1960s, the Maine Forest Service maintained a popular campground at Canada Falls Dam on lands owned by Great Northern Paper Company. Later the North Maine Woods organization was formed by the north woods landowners to manage the recreation sites formerly managed by the Forest Service.

Canada Falls Campground 1960



A TYPICAL MAINE FOREST SERVICE CAMP SITE



Recreation Resources:

Recreational Uses: Recreation on the unit includes fishing, hunting, camping, wildlife viewing, boating, snowshoeing, cross-country skiing, and snowmobiling. There is interest in expanding allowed uses to include horseback riding, bicycle riding, and ATV riding. These uses are not normally allowed in the NMW system. However, in 2006 Pittston Farm was granted permission to allow horses to be trailered into their facility.

Recreation Facilities and Opportunities: The Seboomook and Canada Falls parcels have some developed facilities, including a number of primitive campsites and boat launches, described below. In addition, visitors can choose to stay at a commercial campground – the Seboomook Wilderness Campground, or at a sporting camp and lodge – Historic Pittston Farm, which, although not part of the state ownership, are imbedded in it as “in-holdings” and provide an unusual spectrum of food and lodging opportunities for this otherwise remote area. The following facilities and opportunities are available on the Seboomook and Canada Falls Parcels. Map 6 shows campsites, boat access sites, and snowmobile trails on the Unit.

Campsites: There are 10 designated primitive camping locations on the Seboomook and Canada Falls parcels including 47 campsites; these are former NMW campsites now owned by BP&L. In addition, there are two camping locations at sites owned by Great Lakes hydro at Seboomook Dam, with a total of 3 campsites. Except for one campsite, the Seven-Mile Hill campsite, these campsites are all on water. Two on Canada Falls Lake are water access only. Two of the campsites on the West Branch below Seboomook Dam (Roll Dam and Burbank) are part of the Penobscot River Corridor West Branch trip.

Boat Launch and Canoe Portage Facilities: There are four boat launch facilities on the Seboomook and Canada Falls parcels; including two on Seboomook Lake, one on Canada Falls Lake, and one on the West Branch of the Penobscot River at Roll Dam. In addition, there are existing canoe portages around both Seboomook and Canada Falls Dams. The boating and canoe portage facilities on Seboomook Lake and Canada Falls Lake are owned and maintained by Brookfield Hydro as part of their Hydropower License requirements, and will be improved within three years of the date of the most recent License, December of 2004.

Canoeing and Whitewater Boating Opportunities: The Penobscot River Corridor is a water trail that is part of the State Parks system. The start of the West Branch trip has been traditionally either at Roll Dam, now part of the Seboomook Unit; or at Lobster Stream off the Lobster Trip Road. The popular take-out for this trip is at Umbazooksus Stream. This is about a 35 mile trip. Some travel all the way to the Ranger cabin and boat launch at the constriction between Ripogenus Lake and Chesuncook Lake, another 16 miles all on the lake. Some folks also extend the trip by putting in at Seboomook Dam (another 2.5 miles) and a few even start at the boat access at the other end of Seboomook Lake (another 17 miles).

With State ownership of the Seboomook Unit, the Bureau now has management control of the lands adjacent to two additional river sections tying into the water trail – The North Branch and the South Branch of the Penobscot River, whose confluence is the inlet to Seboomook Lake just above Pittston Farm.

Boating Flow Releases: Under the new FERC hydro license issued in December of 2004, new whitewater boating opportunities will be available on the South Branch, West Branch and North Branch of the Penobscot River.

The South Branch will be managed to have whitewater boating releases every Saturday beginning in July and lasting through mid September - this is a more technical whitewater boating area than the West Branch, with Class V water. Flows will range from 500 cfs to 900 cfs, as compared to a minimum flow of 75 cfs. The South Branch is one of 29 Class V boating stretches featured in “Steep Creeks of New England, a Guide to Class V Runs for the Experienced Whitewater Enthusiast” by Greg and Sue Hanlon (1999).



Canada Falls Dam – photo courtesy of Jim Clark at TRC

Notably this run is the only one of the 29 that will be available on a regular and predictable basis due to the scheduled releases – the others are boatable only in the spring runoff and after storms if you get there at the right time. Recent publicity in the March/April boating publication “American Whitewater” features the South Branch and the unique opportunity to also stay at a historic farm – Pittston Farm.

The boating flow release schedule for Canada Falls-South Branch is set as follows:

Flow releases (cfs), Saturdays from 10:00 AM to 3:00 PM:

Weekend	July	August	September
1	500	600	750 (Labor Day Sat)
2	600	750	600
3	600	600	500 (on or before the 15 th)
4	900	750	

On the West Branch, the new hydro license also calls for higher minimum flows below Seboomook Dam – 500 cfs compared to the past minimum of 150 cfs; this will provide a nice flow level for beginning to intermediate level whitewater boating below Seboomook Dam. There is also one scheduled higher “technical” flow – 1,500 cfs, - to occur on the Saturday of Labor Day Weekend.

For the North Branch; beginning in 2006, there will also be a fall flow release timed for fisheries attraction made possible by releases from water stored at Long and Dole Pond. This could also benefit those wanting to begin an extended PRC trip via the North Branch.

Snowmobile Trails: The “Moosehead Loop Trail” crosses the Seboomook Unit as shown on Figure 9. It is part of an extensive system around Moosehead Lake and connects to the West to Jackman and to the East to Millinocket. Pittston Farm is a major hub for snowmobilers, with food, gas, and lodging available.

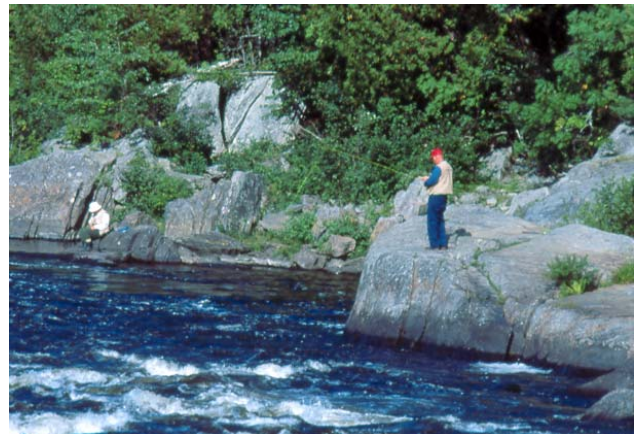


Snowmobiles at Pittston Farm refueling and following the groomer - BP&L photos

Hunting and Fishing: The Seboomook area attracts hunters for deer, moose, bear and small game. Both Historic Pittston Farm and Seboomook Wilderness Campground are used by hunters as base camps, and the late fall is one of the busiest seasons of the year for these establishments. Deer hunting pressure and buck harvest rates are rated as low by MIF&W in the surrounding wildlife management districts (WMD):

	WMD 8	WMD 9	WMD 4
	<u>east of Moosehead</u>	<u>west of Moosehead</u>	<u>north of Moosehead</u>
Hunter-days/mi ²	30	30	15
Bucks/100 mi ²	34	19	25

The West Branch of the Penobscot River below Seboomook Dam is a highly popular salmon and brook trout fishery, and one of the few quality big river fisheries in the north Maine woods area. Canada Falls Lake has a productive wild trout population, which, under the new management of the lake (see hydrology) is likely to support an even more robust wild trout population.



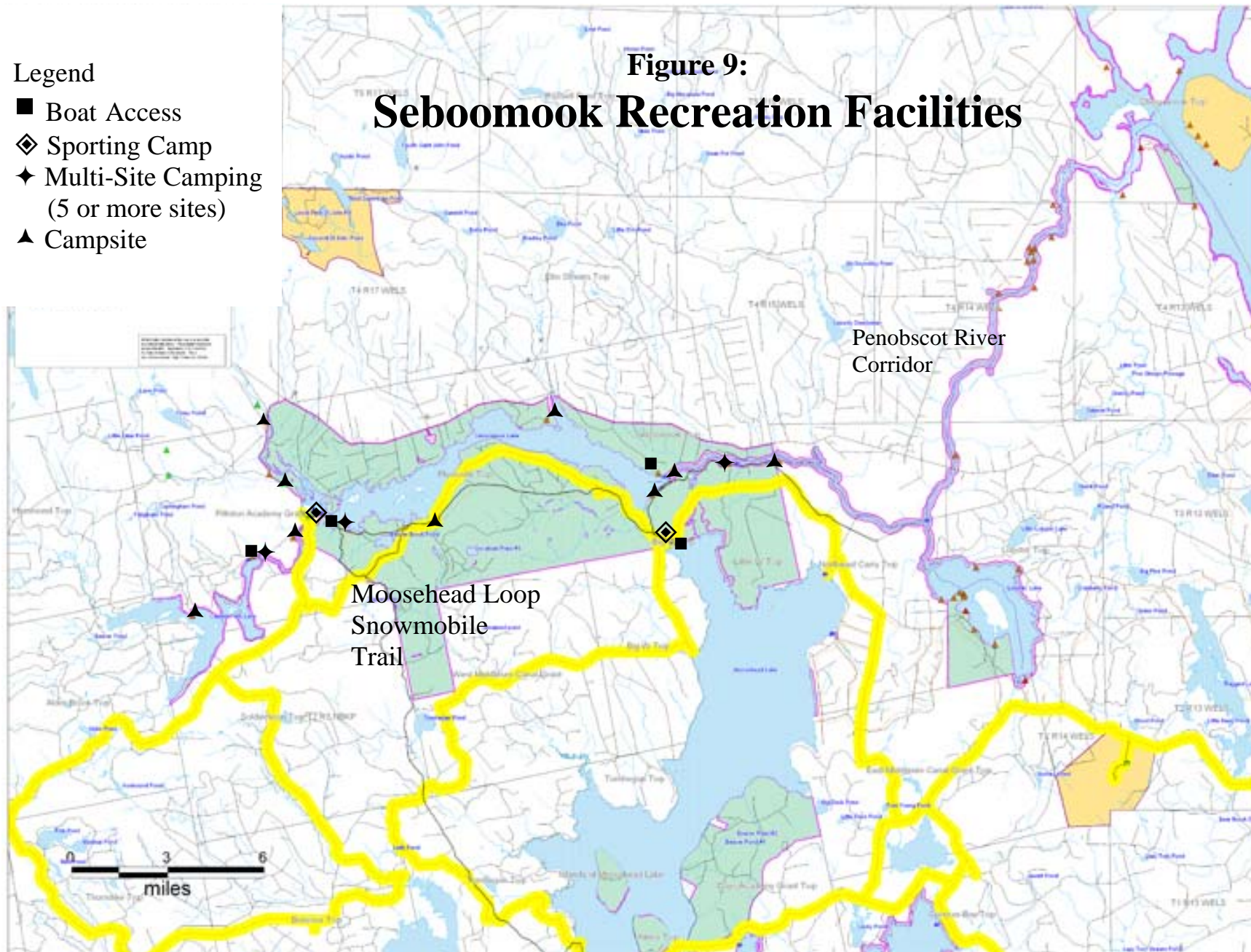
*Fishing on the West Branch
Bill Silliker photo, courtesy Forest Society of ME*

Bear Baiting Sites: Prior to acquisition by the state, North Maine Woods operated 11 beat baiting sites on lands now within the Seboomook parcel. NMW has continued to operate these sites for the Bureau during the Plan development.

Legend

- Boat Access
- ◆ Sporting Camp
- ◆ Multi-Site Camping (5 or more sites)
- ▲ Campsite

Figure 9:
Seboomook Recreation Facilities



Timber Resources:

Seboomook Parcel: This parcel is mostly gently rolling topography surrounding a twelve mile long lake. Except from on the lake itself, vistas tend to be modest in length though the forested hills and shorelines are attractive.

Harvest History: The forest has an extensive history of timber harvesting. During the 1970s and 1980s, harvests were mostly driven by spruce budworm damage, and included widespread clear-cuts on the lands between the lake/river and the Golden Road, except on Pittston Academy Twp, which holds the largest areas of tall, closed canopy softwood stands on the tract. At the end of this period and into the 1990s, large clear-cuts were made on the southeast part of the tract, covering the eastern 2/3 of Little W Twp. Most of the clear-cuts have been treated with herbicides, and hold good stocking of spruce-fir seedlings and saplings, occasionally with significant pine component.

Over the past ten years, harvesting has mostly been heavy partial cuts south of the lake, in all types. The Seboomook unit was acquired by the state in 2004 from Merriweather, LLC, who purchased the land from Great Northern Paper Company in the mid 1990's. Wagner Forest Management LLC managed the land for Merriweather. Merriweather initiated another round of cutting south of the lake from 2001 to 2003. This most recent harvest included heavy cutting of the extensive stands dominated by mature aspen in the Carry Brook drainage, in response to the recent jump in demand for aspen products. There has also been a limited amount of light thinning of softwoods done with cut-to-length processors.

The most pressing silvicultural need is further harvesting of mature aspen. The access is mainly in place, though most of the new roads need to be graveled. These mature stands are beginning to lose value. Though no other areas appear to demand imminent harvest, there are many on which an improvement harvest would be desirable. This tract is almost all good growing land, with sufficient stocking and quality to provide substantial timber volumes in the near term, and increased volumes once the regeneration in the 1970s clear-cut acres is ready for commercial thinning, probably at least 20 years away.

Stand Types: Softwood stands cover 8,600 acres, 21% of the parcel. Most are found on moderately well to somewhat poorly drained sites, with a lesser amount in areas of poor drainage. Over ¾ of the softwood acres are dominated by spruce-fir, the remainder by wet-site species such as cedar, tamarack, and black spruce. The most extensive stands of tall, closed canopy softwoods are found on the northwest corner of the tract, in a major deer wintering area (DWA). Another sizable DWA is located at the opposite corner on Little W Twp, and is partially in good softwood cover and partially in recent, well regenerated clear-cuts.

Mixedwood stands were divided by Wagner into predominantly softwood (8,300 acres, 20% of the parcel) and predominantly hardwood (10,500 acres, 26% of the parcel).

Hardwood stands cover just under 12,000 acres, 30% of the parcel. The most abundant hardwood species tract-wide on all types are red maple, sugar maple, yellow birch, white birch, then aspen. As red maple is common in all types, the leading species in hardwood stands is sugar maple, and yellow birch is probably next, red maple third. Most hardwood stands have

received some harvesting during the past thirty years, with the cut usually being heavier in the intolerant hardwood type due to shorter lived species. Most tolerant hardwood stands hold sufficient stems of good quality to produce valuable timber products, and large old trees are scattered throughout most acres.

Canada Falls Parcel: This 853-acre parcel consists almost entirely of riparian buffer along the lake and river. It is often steep-sided river corridor, and even when flatter will not be conducive to timber management due to its narrow and elongated character and, more importantly, its recreational and visual character. The forest types here resemble those of the larger Seboomook tract for volumes, but are heavier to softwoods. Over 70% of the parcel timber volume is softwoods, 40% in spruce alone, 18% fir, 13% cedar. The leading hardwoods are yellow birch, sugar maple, and red maple, all at 6-7%. Volume averages almost 20 cords per acre, in part because harvesting has been lighter near the waters.

Administrative Concerns:

Roads: There are approximately 30 miles of public use roads in this unit, principally the South Seboomook Road, the “Cut-off” or “Shortcut” Road, the Roll Dam Road, and the Seboomook Dam Road. The 20-mile Road and the Canada Falls dam Road are not part of the Seboomook Unit. The state does not own any portion of the Golden Road; the deed specifies the boundary as a 120-foot offset from the road centerline. However, the state has secured access rights for use by the public of the above mentioned roads that connect to the Seboomook Unit and within the surrounding West Branch easement lands. The state does not have access rights at this time for the entirety of the 20-mile road, but is working to secure those rights.

The condition of the roads on the Unit at the time of acquisition was very rough. Many of these roads were impassable in the spring which is when a large amount of use occurs (fishing and whitewater boating). In addition, the Roll Dam Road and the Cut-off Road were both difficult to negotiate in the summer without 4-wheel drive.

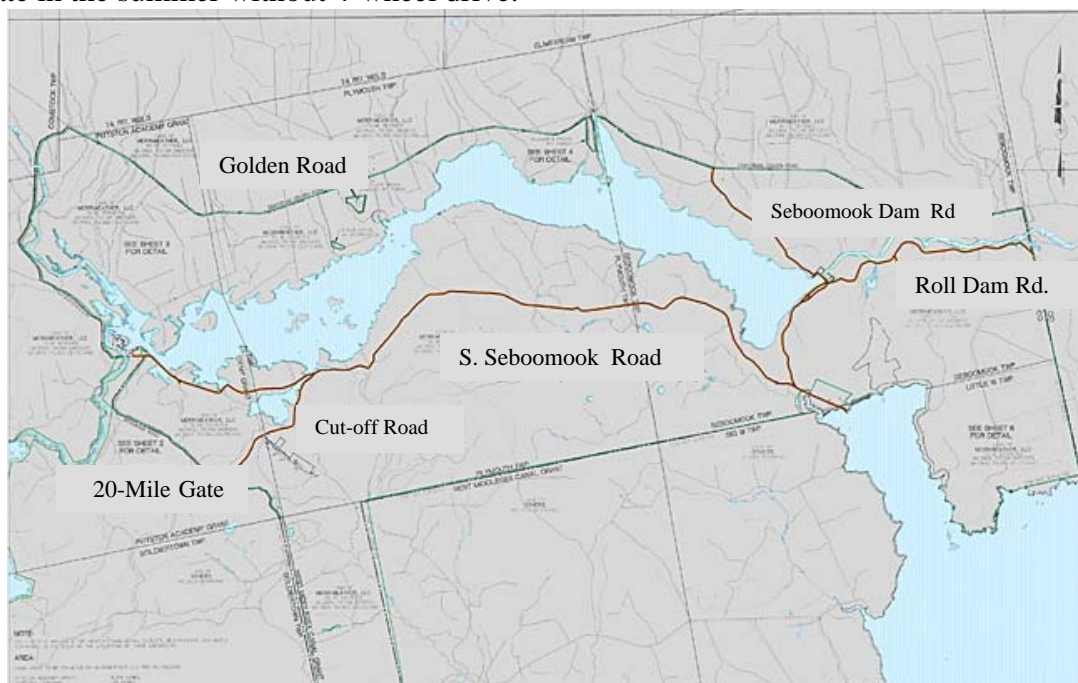


Figure 10: Road Systems in and surrounding the Seboomook Parcel

In 2004 the Bureau focused its attention on assessing the state of the main public access roads. In addition, work began on a “stop-gap” basis on the worst sections of the South Seboomook Road with the Bureau supplying materials and a user donating machine time. In 2005 major work was done on the Roll Dam Road; and in 2006, on the South Seboomook Road.

The Bureau plans to continue to improve and upgrade these roads to our standards over the next several years. The goal of these access improvements is to correct environmental problems, prevent future degradation of the road system and provide improved public access.

All of the work will be done on existing roads around Seboomook Lake and the West Branch of the Penobscot. Although the Cut-off Road is in poor condition it is not essential for access but does reduce travel distances by 5.5 miles. (Note: The Bureau does not own the road around Baker Lake or Canada Falls Lake. St. John Ponds access is gated by the adjacent landowner and is an ecoreserve.)

Gated Roads on the Parcel: The previous owner had installed three gates on the management road that branches off the South Seboomook Road at the Seven-Mile Hill area, leading into the Socatean Ponds, and looping back to the South Seboomook Road. These gates were installed to comply with the restricted access requirement imposed under the LURC zoning ordinance for the Socatean Ponds which are designated as remote ponds. Access restrictions limit motorized access other than snowmobiles to not closer than one-half mile. The gate nearest the Seven-Mile Hill entrance is not required to comply with the LURC restrictions, and the Bureau has removed this gate.

North Maine Woods and Gated Access: The Seboomook Unit presently lies within the North Maine Woods system. Management of the Unit as part of that system has been the topic of discussion and negotiation between the Bureau and North Maine Woods since the start of the planning process in 2004. The Bureau values its relationship with North Maine Woods very highly, and is seeking to develop a partnership with North Maine Woods that would enable it to manage the Seboomook lands in accordance with the Bureau’s mission and statutory mandates, and continue to be part of the North Maine Woods system. The existing arrangement, however, imposes relatively high fees on visitors to Seboomook's public lands. The Bureau has made a number of offers that secure NMW's income from operations at the Unit, in return for flexibility with regard to fees. Discussions have been far-ranging, and several specific proposals have been reviewed. Unfortunately, despite these good faith discussions and considerable detailed work on specific proposals, North Maine Woods has been unwilling to depart from the status quo. The Bureau is now examining alternatives, with the goal of having a new arrangement by the summer of 2007. The Bureau will, throughout this process, continue discussions with North Maine Woods.

St. John Ponds Parcel

Character of the Land Base

The St. John Ponds parcel includes an assemblage of small ponds that form the headwaters of the St. John River (Map 7). Most of the unit has been harvested heavily in the recent past, and many of the interesting natural features on the unit occur on or near its numerous ponds. Several unmaintained logging roads traverse the unit, which is accessible only through a gated access road off the Golden Road. The entire 3,890 acre parcel was acquired with a stipulation that it be managed as an Ecological Reserve.

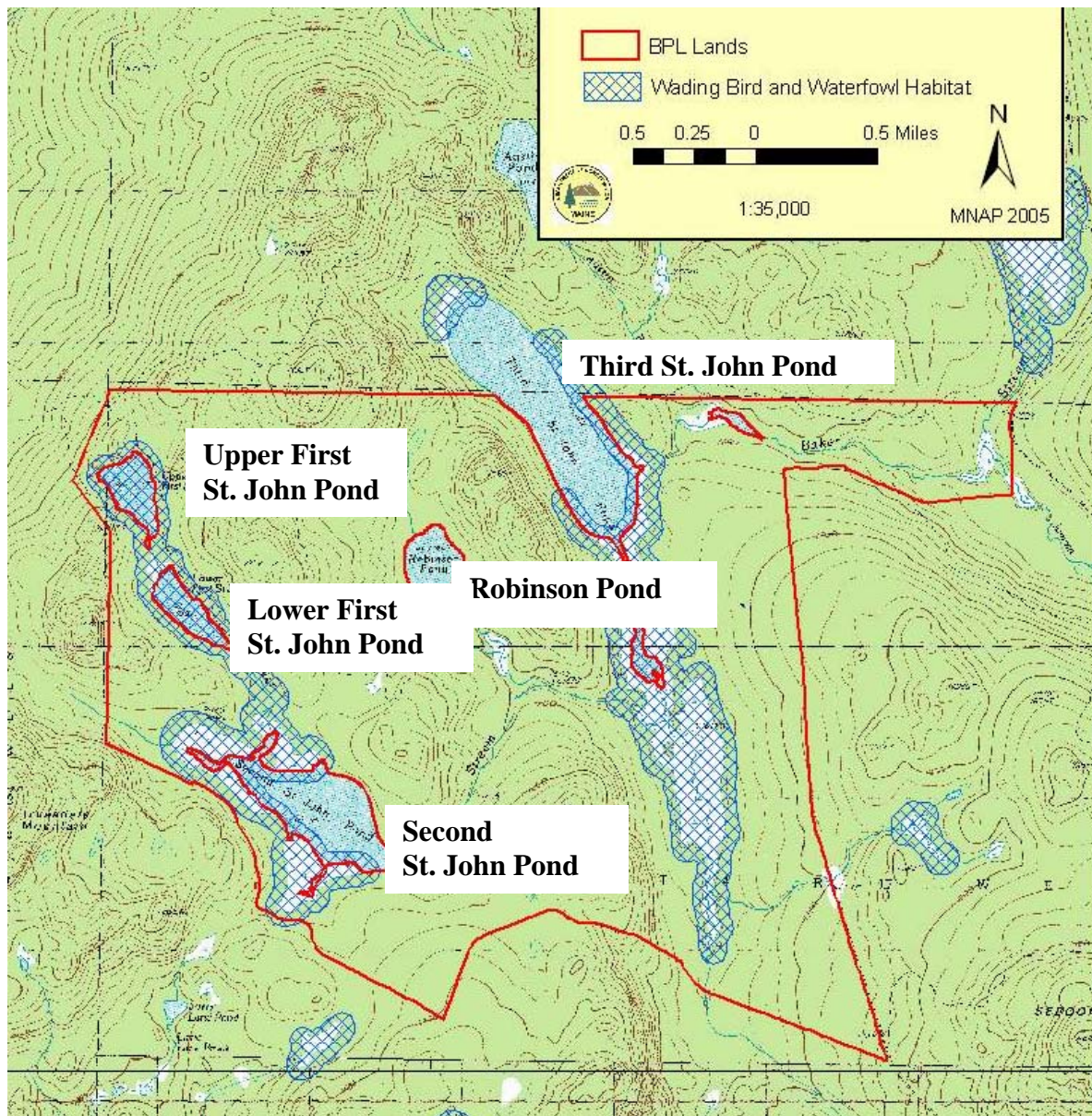


Figure 11: The St. John Ponds Parcel

Natural Resources

Geology and Soils: The St. John headwaters are hillier than elsewhere on the unit, with exception of Big Spencer Mountain, and reach elevation of about 2,000 feet. This part of unit is almost entirely underlain by the Frontenac formation, a bedrock unit that consists of coarse-grained sedimentary rocks. Glacial till deposited during Maine's last glaciation 11,000 years ago tops this sedimentary rock. Soils at St. John Ponds have not been mapped.

Hydrology and Water Quality: Upper First St. John Pond is 30 acres in extent. Lower First St. John Pond is 29 acres and Secchi disc visibility extends to a depth of 1.6 feet (0.5 meters). Robinson Pond 34 acres and Secchi disc visibility extends to a depth of 2.6 feet (0.8 meters). Second St. John Pond is 105 acres, and Secchi disc visibility extends to a depth of 3.3 to 3.8 feet (1.0-1.15 meters). Third St. John Pond is 190 acres and Secchi disc visibility extends to a depth of 6.6 to 7.0 feet (2.0-2.15 meters). Small streams connect these ponds that collectively form the headwaters of the St. John River.

Wetlands: The St. John Ponds unit has a total of 532 acres of wetlands; 199 of these acres are forested, while 333 acres are open wetlands (Map 8). The unit has 600 acres of wading bird habitat. The 252 acre wetland south of Third St. John Pond comprises the bulk of the wetland acreage on the unit.

Ecological Processes: The wetland south of the Third St. John Pond shows evidence of fluctuating water levels such as old stumps and dead cedar trees in the marshy areas. No direct evidence was observed, but changing water levels often point to the presence of beavers.

Rare Plant and Animal Species: Rare plants on the unit include blue-beaked sedge (*Carex rostrata*), ranked S2, found by Second St. John Pond, Third St. John Pond, Robinson Pond, and in a drainage by an old logging road. Blue-beaked sedge tends to grow in open, sunny, saturated or inundated areas and reaches the southern limit of its range in northern New England. Wiegand's sedge (*Carex wiegandii*), ranked S3, was also found by Third St. John Pond in a transition zone between a Spruce – Fir – Cinnamon Fern Forest and an Alder Thicket. No rare animals are known from the St. John Ponds unit.



Wetlands below Third St. John Pond – MNAP photo

Natural Communities: Though the upland forests on the St. John Pond unit have been harvested heavily in the recent past, many interesting wetlands adjacent to the ponds remain intact. In contrast to upland forests on the unit, forested wetlands have not been recently harvested.

Third St. John Pond: Only a portion of the 190-acre Third St. John Pond is within the state-owned parcel. Significant natural communities include:

- a 252-acre exemplary streamshore ecosystem - a wetland that includes both forested and non-forested natural community types.
 - The southeastern part of the wetland contains a middle-aged spruce – larch forested bog with 70% canopy closure. The canopy is dominated by red spruce (*Picea mariana*) and balsam fir, with a small amount of mountain paper birch (*Betula cordifolia*). The trees are mostly 6 to 10 inches in diameter, and there is evidence of a historic cut 40 or more years ago.
 - closer to Third St. John Pond an extensive shrub marsh that flanks both sides of the inlet stream - a sweet gale mixed shrub fen with an abundant amount of old, dead trees and stumps. The shrub layer is made up of speckled alder (*Alnus incana*) and northern white cedar. There is a narrow band of northern white cedar woodland fen with stunted cedar (about 20 feet tall) adjacent to the upland on both sides. The water level in this area was historically higher in this area probably as a result of an old beaver dam.
- A remnant patch of mature beech-birch-maple forest on a steep slope (~50%) west of the Third St. John Pond wetland that runs along Baker Stream. The ledges are seepy and well shaded, but many large trees were removed in a harvest likely during the late 1990s.

Second St. John Pond: The most southwesterly of the ponds, 106-acre Second St. John Pond, is slightly less than a mile long and approximately ¼ mile wide at its widest point. Natural communities include:

- a 30-acre beaver-influenced peatland surrounding the inlet on the south side;
- a sweet gale – mixed shrub fen to the north;
- a leatherleaf boggy fen north of the sweet gale – mixed shrub fen toward the pond's edge;
- a wet sheep laurel – dwarf shrub bog community type with approximately 65% shrub cover towards the interior of the peatland, away from the open water and in a slightly raised area.

Robinson Pond: The 34 acre Robinson Pond is a more or less circular pond, approximately ¼ of a mile in diameter. Significant natural communities include:

- a ten meter wide band of mature cedar – spruce seepage forest surrounding the north and west sides by. Most of the cedar is in the 14 to 28 inch diameter range, but some trees are as large as 35 inches in diameter. Within this buffer, there is evidence of selective cutting approximately 80 or more years ago. Areas upslope of the buffer were harvested within the last ten years.
- This cedar seepage transitions into a leatherleaf boggy fen in the area surrounding the inlet stream on the north side of the pond.

-
- The map displays the BPL Lands in the San Juan Mountains, highlighting rare plants and exemplary natural communities. The legend indicates that BPL Lands are outlined in red, Rare Plants are marked with yellow dots, and Exemplary Natural Communities are shaded in purple. A scale bar shows distances up to 0.5 miles, and a north arrow is present. The map is dated MNAP 2005.
- Key features and labels on the map include:
- Carex rostrata**: Labeled at four locations (yellow dots).
 - Carex wiegandii**: Labeled at one location (yellow dot).
 - Streamshore ecosystem**: Labeled at one location (purple shaded area).
 - Trinidad Mountains**: Labeled on the left side of the map.
 - San Juan Mountains**: Labeled on the right side of the map.
 - San Juan River**: Labeled at the bottom of the map.
 - San Juan Lake**: Labeled at the bottom of the map.
 - San Juan Lake Dam**: Labeled at the bottom of the map.
 - San Juan Lake Bridge**: Labeled at the bottom of the map.
 - San Juan Lake Road**: Labeled at the bottom of the map.
 - San Juan Lake Trail**: Labeled at the bottom of the map.
 - San Juan Lake Campground**: Labeled at the bottom of the map.
 - San Juan Lake Picnic Area**: Labeled at the bottom of the map.
 - San Juan Lake Boat Launch**: Labeled at the bottom of the map.
 - San Juan Lake Fishing Pier**: Labeled at the bottom of the map.
 - San Juan Lake Swimming Area**: Labeled at the bottom of the map.
 - San Juan Lake Campsite**: Labeled at the bottom of the map.
 - San Juan Lake Tent Site**: Labeled at the bottom of the map.
 - San Juan Lake Fire Pit**: Labeled at the bottom of the map.
 - San Juan Lake Restroom**: Labeled at the bottom of the map.
 - San Juan Lake Drinking Water**: Labeled at the bottom of the map.
 - San Juan Lake Trash Can**: Labeled at the bottom of the map.
 - San Juan Lake First Aid Kit**: Labeled at the bottom of the map.
 - San Juan Lake Map**: Labeled at the bottom of the map.
 - San Juan Lake Compass**: Labeled at the bottom of the map.
 - San Juan Lake Binoculars**: Labeled at the bottom of the map.
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 - San Juan Lake Backpack**: Labeled at the bottom of the map.
 - San Juan Lake Hiking Stick**: Labeled at the bottom of the map.
 - San Juan Lake Hat**: Labeled at the bottom of the map.
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 - San Juan Lake Pants**: Labeled at the bottom of the map.
 - San Juan Lake Shirt**: Labeled at the bottom of the map.
 - San Juan Lake Jacket**: Labeled at the bottom of the map.

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Fisheries and Wildlife Resources

Fisheries Resources: Though wildlife species have not been surveyed on the unit, all the ponds have been surveyed for fish species. Most ponds have brook trout (except Robinson) and an assortment of shiners, dace, chubs and yellow perch. There have been no identified endangered or threatened animal species found on this parcel.

Wildlife Resources: The outstanding feature of this parcel is the extensive wetlands which occur between the 5 small ponds and off the parcel. The uplands have been heavily harvested and roaded but the significance of the wetlands resulted in the entire parcel being designated as an ecological reserve in 2003 prior to state ownership.

The recent harvesting provides abundant early successional habitat for pine siskin, dark-eyed junco, magnolia warbler, Nashville warbler, ruby and golden crowned kinglets and yellow-bellied flycatcher.

This parcel is within the region that has the highest moose densities in the state. A lack of dense softwood shelter limits deer populations and other softwood dependent species such as pine marten, snowshoe hare and spruce grouse. Coyote, red fox, porcupine and weasels are residents of this habitat. Other mammals associated with the wetlands include beaver, mink and muskrat. Bird species found around wetlands include great blue heron, black duck, common snipe, tree swallow and red-winged blackbird.

Historic and Cultural Resources:

The St. John Ponds were named after the date that the St. John River was discovered by Samuel de Champlain in 1604. It was St. John the Baptist's Day. Little is known about the historical or pre-historical use of this area.

Recreation Resources:

This unit has traditionally been used for hunting and fishing. Access to the parcel is now limited by a gate on the Gulliver Brook Road at its junction with the Golden Road, approximately 5 miles from the parcel. The gate installed by Wagner Forest Management Company, in order to meet existing land use regulatory requirements for the protection of remote ponds and to provide a remote recreation area. The St. John Ponds, except for Robinson Pond, are zoned as remote ponds under LURC zoning, which limits road access to not closer than one-half mile of the ponds. The Bureau, under the terms of the access easement it holds with the landowner, Merriweather LLC, for public use of this road, may request the landowner to remove the gate, subject to a plan that addresses any land use regulations, that will not allow access through into T5R17, and that will not interfere with timber harvest operations in the area.

Timber Resources:

The St. John Ponds parcel was acquired by the state in 2004 from Merriweather, LLC. Prior to acquisition by Merriweather in the 1990s, the land was part of the vast Great Northern Paper holdings. Because of its ecological reserve status, timber management will not be an option.

Under Merriweather ownership, the land was managed by Wagner Forest Management LLC. The unit received heavy, extensive harvesting in the 1990s, and parts of the unit appear to have been repeatedly herbicided.. Current regeneration consists of seedling- and sapling-sized softwood stands and young hardwood stands that were harvested by overstory removal.



*Typical road and forest conditions in the St. John Pond parcel
MNAP photo*

The stocking is 65% hardwoods, some due to preferential cutting of spruce and fir but mostly because of site characteristics. The most abundant species by far is sugar maple at 30%. Spruce is second at 19%, yellow birch is third with 12% and red maple and fir each make up 10%.

The area east of 3rd Pond and its outlet were heavily cut or clear-cut 10-20 years ago, and appear to hold mostly softwood saplings, possibly having been herbicided. The rest of the tract is mostly tolerant hardwood stands grading to mixedwood along ponds and brooks. Essentially all acres were partially harvested, some cut heavily, during the same years as the land to the east.

Baker Lake Parcel

Character of the Land Base

Baker Lake lies in the upper portion of the St. John River waterway in the northern region of Somerset County and is a popular starting point for trips down the St. John River. The Baker Lake parcel was acquired by the state in 2003 from Merriweather, LLC. Under Merriweather's ownership, the land was managed by Wagner Forest Management Company. Prior to that it was part of Great Northern Paper Company's vast holdings.

The state's 1,620 acre Baker Lake ownership consists of a narrow buffer around the lake (500 – 2000 feet) and its associated wetlands. Funds provided by The Nature Conservancy (TNC) assisted in the purchase of this unit, subject to an agreement with TNC that the acreage "be managed as Public Reserve land for remote recreation and in a manner that preserves its important conservation and scenic values."

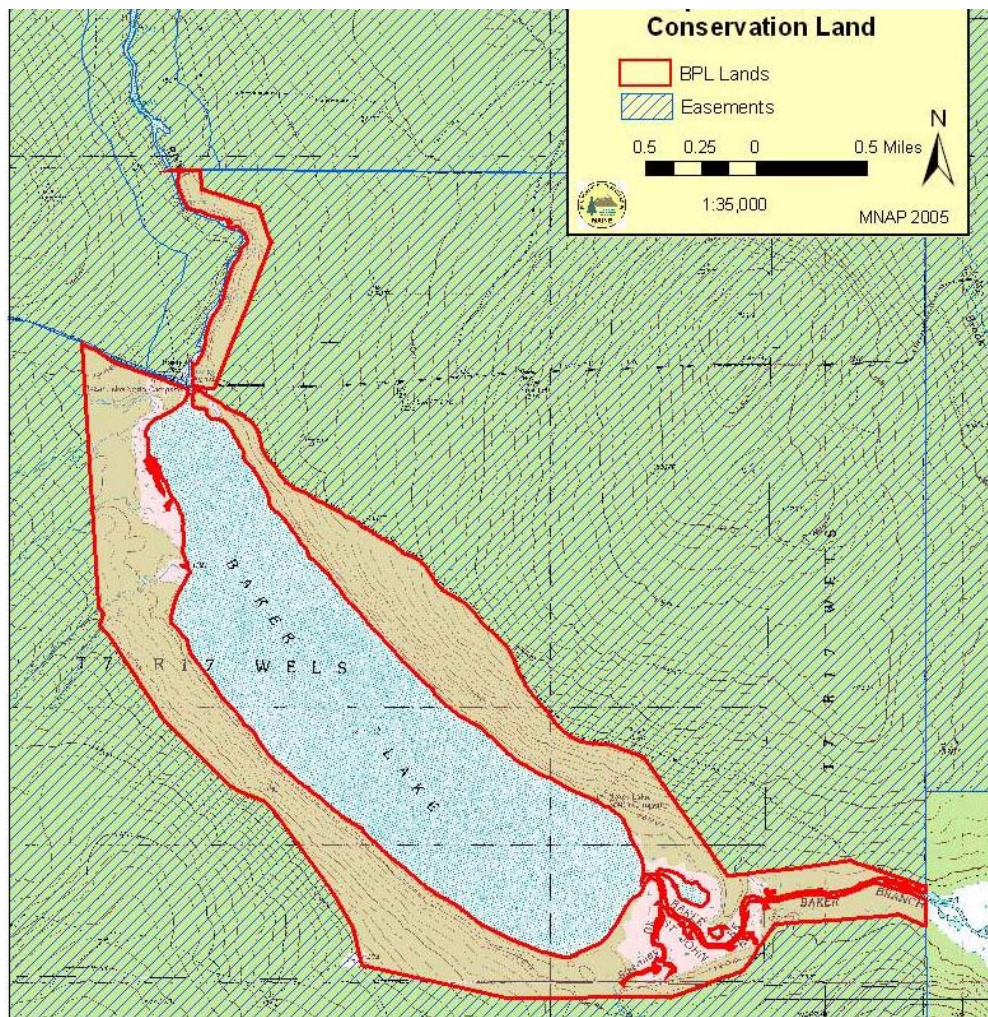


Figure 13 - Baker Lake Parcel

Natural Resources

Geology and Soils: Baker Lake is underlain by a single geologic unit known as the Northeast Carry Formation. This formation is primarily slate and fine sandstone and dates to around 400 million years ago, when two of the earth's plates were separating (or rifting).

The surficial geology of the southern half of the lake is defined as a stagnation moraine, while the northern half of the lake is till deposits, both related to the last glaciation of the state 11,000 years ago. Along the inflow and outflow of Baker Lake is stream alluvium. Soils have only been mapped for the southern half of Baker Lake. The dominant soil type in this area is the Daigle-Aurelie association. These deep, silty soils are derived from dense glacial till and often include slivers of rock. The soils that are part of the southeastern wetland on the lake are considered histosols, soils rich in organic matter.



Wetland south of Baker Lake – MNAP photo

Hydrology and Water Quality: Baker Lake is 1,231 acres in size and forms part of the headwaters to the St. John River. Secchi disc visibility extends to a depth of 9.2 to 9.8 feet (2.8 to 3.0 meters), and pH levels for the lake range between 6.82 and 7.14. The lake has some very shallow areas that can catch unsuspecting motor boats, though it does reach a maximum depth of 30 feet. Lake levels fluctuate seasonally with spring runoff.

Wetlands: The Baker Lake parcel includes a total of 436 acres of wetlands. Forested wetlands comprise 172 acres, while the remaining 263 acres are non-forested. Most of open wetlands are located around the edge of the lake, with the open wetland at the lake inflow comprising the bulk of the open wetland acreage. The wetlands at Baker Lake support 427 acres of inland wading bird habitat.

Ecological Processes: The naturally fluctuating water levels of Baker Lake help maintain the natural communities that surround the lake. In particular, spring flooding accompanied by ice scour (chunks of ice dragging across the soil, often uprooting, damaging, or killing fragile seedlings) allows communities such as sedge meadows to flourish where trees could not survive. In the surrounding uplands, spruce budworm infestations have likely damaged forests. By preferentially choosing balsam fir as its host, spruce budworm alters forest composition, reducing the fir component of the canopy.



Rare, Threatened or Endangered Animal Species:

There are no identified endangered or threatened wildlife species found on this parcel. Rare animal species found on this parcel include the wood turtle (ranked S4) and Tomah mayfly (ranked S2). Both species occur in aquatic and riparian habitats that currently receive regulatory protection.

The wetland complex on the south end of Baker Lake is home to wood turtles. Wood turtles are declining throughout their range, with Maine harboring some of the largest and most viable populations in the U.S. This species of special concern spends most of its time in or near streams

or rivers, while becoming increasingly terrestrial during the summer months when it frequents adjacent forests, fields and wetlands. Wood turtle population growth is constrained by the short growing seasons and cold winters of Maine. Combined with human disturbance, these constraints could jeopardize the viability of wood turtle populations throughout the state. One of the greatest threats to Maine's wood turtle populations is illegal collection for the pet trade; collectors can decimate local populations in a short amount of time.

Tomah mayflies (ranked S2) have been located just upstream of the wetland complex on the St. John River inlet to Baker Lake, and suitable habitat exists within the Baker Lake parcel. Though they occur in sedge meadows, a common wetland type, Tomah mayflies are globally rare and are currently known almost entirely from Maine. They depend on highly productive, seasonally flooded sedge meadows along large streams or rivers to complete their life cycle, which includes feeding on decaying plant matter in the meadow as larvae in the spring, emerging from the water as adults when spring floodwater recedes, laying eggs in the stream channel nine days later, hatching in December, and growing slowly as nymphs under the ice until spring flooding. The majority of this wetland is mapped by MDIFW as wading bird and waterfowl habitat.

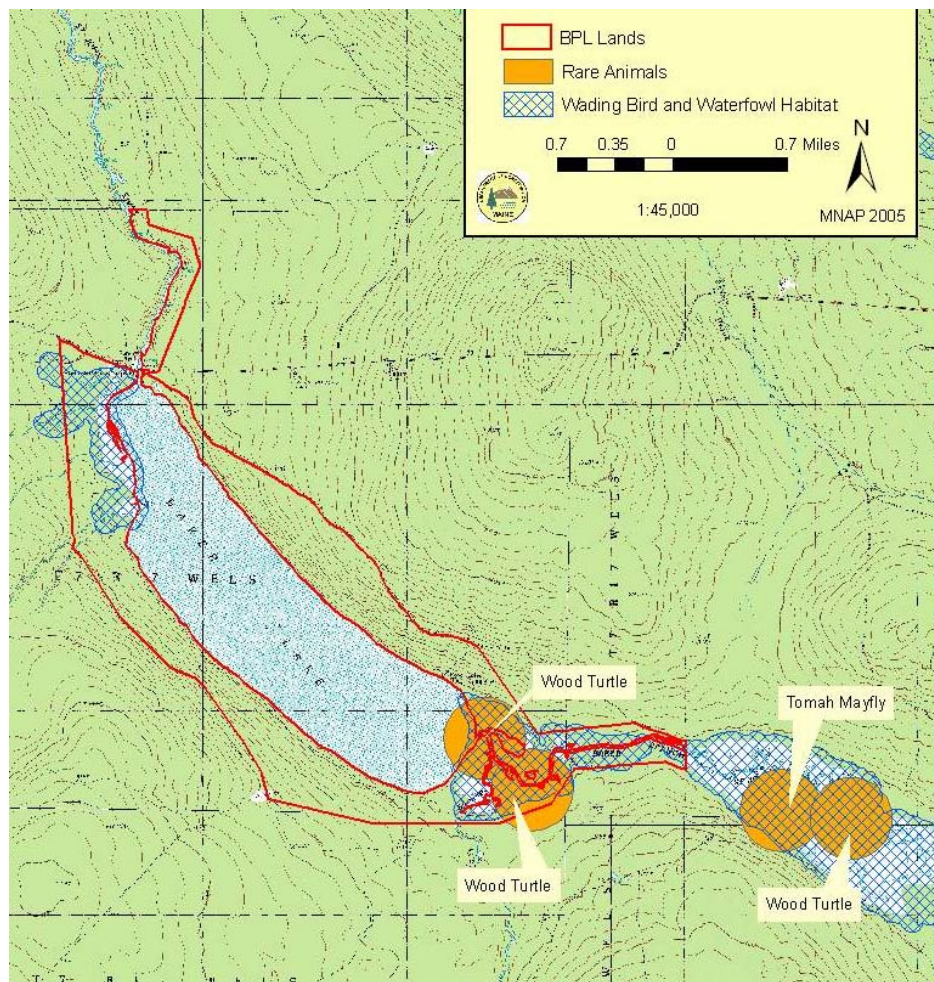


Figure 14: Rare Animal Species, and Wading Bird and Waterfowl Habitat

Natural Communities: Significant natural communities include:

- a small (a few acres) bulrush bed, a lakeshore community type, located immediately south of the northern Baker Lake campsite near the outlet of the St. John River. It extends southward along the shore for approximately 100 meters and is dominated by tall rushes and other graminoid species and has various aquatic plants intermixed in the standing water.
- A complex of wetland communities comprising a 270-acre exemplary streamshore ecosystem is found where the St. John River enters Baker Lake (at the southeastern end of the lake). Low, sandy beaches at the lake's edge grade into alder shrub thickets in drier areas. In wetter areas closer to the inlet stream and associated pools, a mixed graminoid shrub marsh dominates. Soils in these areas range from silty to mucky.

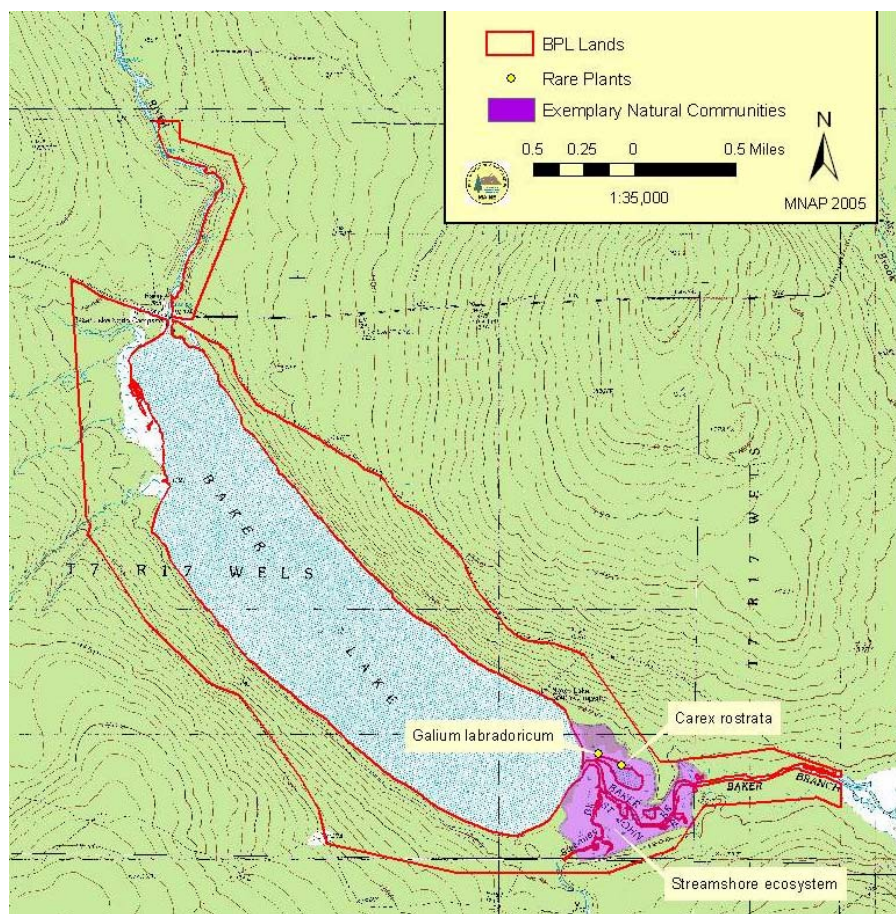


Figure 15: Baker Lake Rare Plants and Exemplary Natural Communities

Two rare plants were found within the stream shore community at the south end of the lake on the north side of the inlet: bog bedstraw (*Galium labradoricum*) and blue-leaved sedge (*Carex rostrata*). Both species tend to be found in wet sedge meadows.

Fisheries Resources: Fish found in Baker Lake include: blacknose dace, blacknose shiner, brook trout, common shiner, cusk, fallfish, golden shiner, lake chub, landlocked salmon, longnose sucker, muskellunge (“muskies”), pearl dace, rainbow smelt, white sucker, and yellow perch. The introduction of muskies in Lac Frontiere by the Quebec government in the 1960s enabled the non-native fish to migrate into Maine waters lying within the St. John River watershed. Muskies first appeared in Baker Lake in 1984 and have since established populations in other areas within the watershed. They are valued as sport fish for their large size and aggressive fighting. However, as large, fast-growing predators, they also feed on whatever is available, including native trout and salmon populations. The lake receives moderate fishing pressure in the spring.

Wildlife Resources: The uplands that surround Baker Lake likely support a typical mix of wildlife for the region. Moose in this region are abundant and deer are scarce. Black bear are common and coyote, red fox, snowshoe hare, American marten, porcupine, beaver, muskrat, mink, weasels and river otter also occur in this region.

The uplands support songbird species associated with mature softwood types and riparian zones such as sharp-shinned hawk, Spruce grouse, black-backed woodpecker, gray jay, red-breasted nuthatch. Wetlands provide habitat for great blue heron, black duck, common snipe, tree swallow and red-winged blackbird.

A territorial common loon pair has been documented on Baker Lake during recent surveys but successful breeding could not be determined. Common and red-breasted mergansers utilize the lake for breeding and brood rearing.



Muskie fishing in northern Maine – photo courtesy of Ross Lake Camps, Clayton Lake

The riparian zone and wetland habitats support reptiles and amphibians such as wood turtle, spotted, blue spotted salamanders and red spotted newt. American toads, green frog and mink frog should also be found here.

Historic and Cultural Resources:

Archeological artifacts discovered at Baker Lake indicates use of this area by Native Americans at least in the Ceramic Period. As today, this headwaters area probably was part of a canoe route following the St. John River, and connecting (via Big Bog) to the North Branch of the Penobscot River. The large wetland at the inlet end of the lake was likely part of the lake at one time, and could have been attractive for prehistoric settlement, according to Spiess (2004).

The Baker family settled in the area in 1773 and had many descendants for whom Bake Mountain, Lake, Stream, etc. were all named. Moscow Township was originally called Bakerstown.

Recreational Resources:

A camping area and unimproved boat launch are located at the outflow of Baker Lake, and this launch is often used as a starting point for canoeing trips down the St. John River. The camping area appears to be used heavily, and much of the vegetation in and around the campsite is trampled. Another campsite is located on the south end of Baker Lake, though it was not investigated. The Nature Conservancy owns a private camp immediately across the lake's outlet in addition to land north of the unit.

Sport fishing has become popular on the lake, especially since the unauthorized introduction of muskellunge, resulting in motorized boats being common despite the lake's shallow areas.



*Baker Brook
Bill Silliker photo
Courtesy Forest Society of ME*

Timber Resources:

The 1,625 acre parcel surrounds Baker Lake and both sides of the Baker Branch running into the lake. Although the waterside strip width is 1,000 feet or a bit more, the Baker Lake lands will be difficult to manage efficiently for timber. This is mainly lowland and mid-slope acres, most of which have received heavy cutting since 1980. A 2001 timber appraisal conducted by Wagner estimated the stocking at 10 cords per acre, evenly split between hardwoods and softwoods. Prior to the most recent harvests, this land was almost certainly much heavier to softwoods, more in line with the Canada Falls tract, which is over 70% softwood by volume. Spruce and fir share 43% of the volume, spruce predominant, while sugar maple and yellow birch combine for another 28%, indicating that some of the land is more fertile mixedwood/hardwood site. Red maple, white birch, and cedar share another 23% of tract volume. Given the low volumes, even if this parcel is designated for timber management, it is unlikely that any harvest activities would be indicated during this Plan interval.



Baker Lake, looking south – BP&L photo

Big Spencer Mountain

Character of the Land Base

Big Spencer Mountain juts incongruously from the surrounding landscape and presides over the surrounding gently rolling hills. The hardwood forests near the mountain itself appear not to have been harvested in thirty or more years, though portions of the tract closer to its boundaries experienced heavy clearcutting in the 1980s and 1990s. The plant communities of Big Spencer form a good representation of montane forests progressing along an elevational gradient, and two exemplary natural communities were found on the parcel.

Big Spencer Mountain was acquired by The Forest Society of Maine from Great North Woods, LLC in 2001, and subsequently transferred it to the State with the stipulation that it be managed as an Ecological Reserve. The land had been managed by Wagner Forest Management Company. A small parcel (2.3 acres) at the summit was excluded from the acquisition. The in-holding contains some structures, including an unattended fire tower, two large banks of solar panels, a small communications building, and a wood helipad platform.



Big Spencer Mountain – MNAP photo

Natural Resources

Geology and Soils: Big Spencer Mountain is capped by quartz-rich volcanic rocks that resist weathering. The volcanic bedrock was deposited in an ocean basin as North America collided with a microcontinent in the Acadian orogeny 400 million years ago. Surrounding and underneath this volcanic cap is a formation comprised of dark sandstone, siltstone, and slate – sediments that were part of the ancient ocean basin. This sedimentary rock weathers easily compared with the volcanic rock and is one of the constituents of the rolling landscape that is prevalent in the area.

The top of Big Spencer Mountain has no surficial geology deposits and is simply defined as bedrock. The sides and base of the mountain are coated in a layer of till deposited during the last glaciation. Soils on Big Spencer have not been mapped.

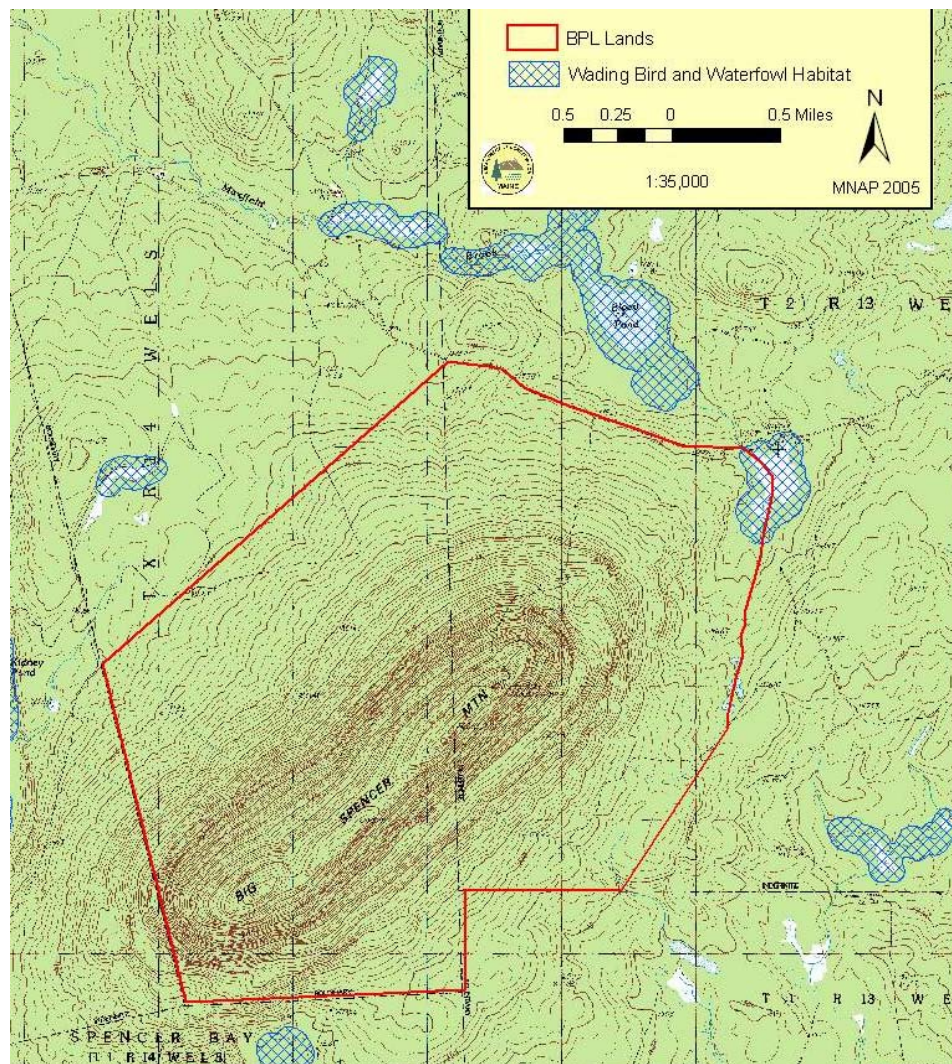


Figure 16: Big Spencer Mountain Parcel

Wetlands: Big Spencer's sparse wetlands all occur at the periphery of the unit, mostly along the eastern boundary. There are a total of 41 acres of wetlands, 15 of which are forested and 26 of which are open. Thirty acres on the unit are considered wading bird habitat.

Ecological Processes: Ice, wind, and cold temperatures at the top of Big Spencer Mountain limit the number of species that can successfully live there. "Krummholz" (meaning "crooked wood") is the term used to describe the balsam fir, black spruce, and heart-leaf paper birch that populate this harsh environment. As the name implies, the growth form of these species under these conditions tend to be low, dense, and shrub-like. Often one tree will have multiple leaders that have died back, and much of its summer growth may be stripped by the ice and winds of winter. As anyone who has ever tried to bushwhack through such a community can attest, these dense growth forms create a virtually impenetrable, dwarfed forest of trees up to ten feet tall.

Spruce budworm damage is evident along the ridge of Big Spencer Mountain. Since balsam fir is the preferred food of the budworm, a krummholz community dominated by fir is an easy target for the pest. The most recent outbreak occurred in the 1980s, though budworm damage is difficult to assess against the backdrop of krummholz wind and ice damage.

The hardwood communities on the unit show evidence of typical small gap disturbances from ice, windthrow, or natural tree mortality. These gaps increase to complexity of forest structure and add to the diversity of microhabitats in the forest for plants and animals.

Natural Communities:

- Ten to twenty acres of the summit is krummholz – stunted balsam fir and black spruce (up to ten feet tall) and extremely dense, in most areas underlain by a thick carpet of mosses. An open area at the summit contains a number of structures for communications. In addition, an area of about ¼ acre has been severely trampled by hikers.
- The remainder of the lands above 2,000 feet is best characterized as a fir – heartleaved birch – sub-alpine forest natural community along the spine of the mountain. This upper elevation forest has little to no evidence of past harvesting but frequent evidence of natural disturbance, including past insect damage and wind/ice damage. Balsam fir, red spruce, and heartleaved birch dominate the canopy. The slope is bouldery and ranges from 30% to 45% in grade.



The Spruce – Northern Hardwoods Forest on Big Spencer, MNAP photo

- Around 2000 feet elevation, a band of heart-leaved paper birch (*Betula cordifolia*) runs along the north side of the mountain.
- Below this band, a spruce – northern hardwoods forest characterizes the transition zone from the subalpine forest to the mixed-wood and hardwood dominated middle and lower slopes. The eastern side of the mountain drops off steeply to the southeast, with numerous sparsely vegetated cliffs – the largest roughly 200 feet tall. Some areas of the lower slopes show signs of past harvesting (i.e., within the past three decades). Heavier past harvest levels are evident within about ½ mile of the road network. On the north side of the mountain, past harvest signs become minimal above 1,700 feet, and on the east side, harvest signs are minimal above 1,900 feet. One cedar tree was measured to be 36 inches in diameter, and a few spruce trees on these lower and intermediate slopes were aged to be over 200 years old. Sugar maple (*Acer saccharum*), beech (*Fagus grandifolia*), and yellow birch (*Betula alleghaniensis*) dominate the canopy with red spruce and heartleaved birch found scattered towards the upper edges of the community.

The most botanically interesting features of these lower hardwood and mixed-wood slopes are seasonal drainages – one following the T2 R13/TX R14 town boundary on the north side of the mountain and several others on the lower western slopes. These seasonal drainages support several uncommon rich woods species.

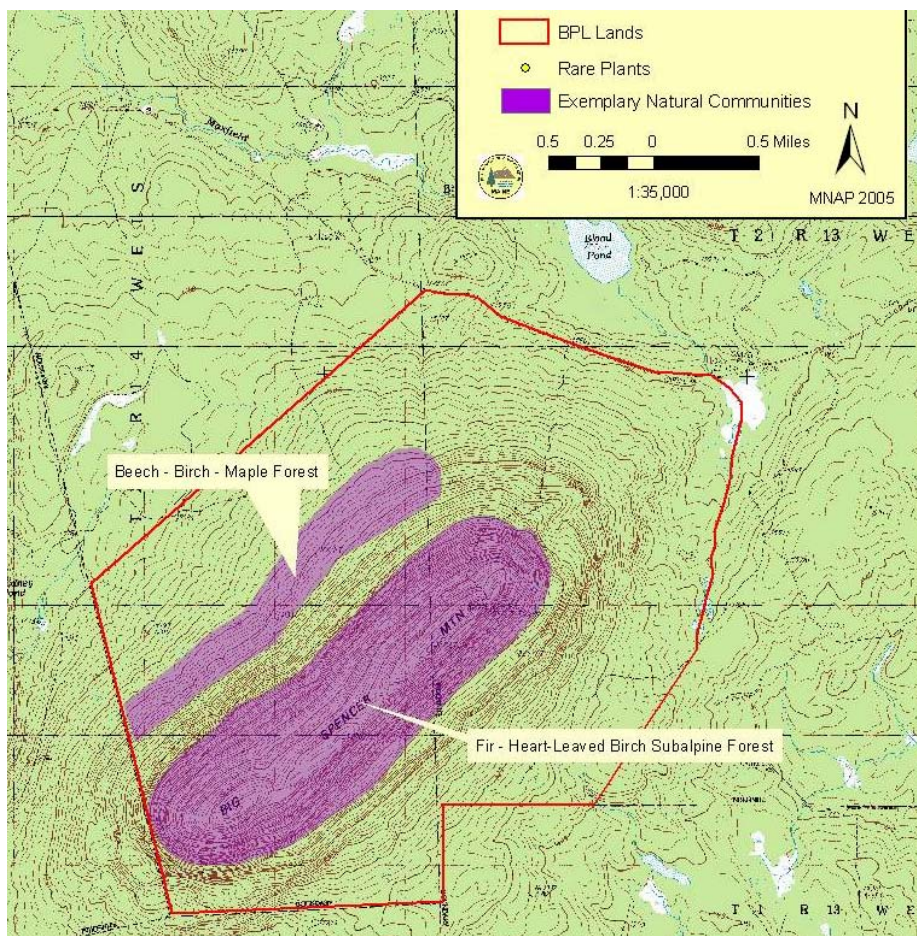


Figure 17: Exemplary Natural Communities

Wildlife Resources: Beyond the typical mix of wildlife species found in this area of the state, Big Spencer Mountain is known to harbor some uncommon species that require large, unfragmented blocks of forest land. The extensive, mature hardwood forest on the northwest slope of the mountain provide suitable habitat for a suite of forest interior warblers including black-throated blue, black-throated green, black and white and northern parula. While the black-throated blue warbler, which depends on mature deciduous forests, has a healthy population in Maine, about 20% of the global population of this species breeds in Maine, making habitat conservation in Maine important for the health of the whole species.

Extensive high elevation krummholz forest on Big Spencer Mountain provides optimum habitat for Bicknell's thrush, a species of special concern due to restricted habitat. Bicknell's have been documented at this location for the last 5 years through annual surveys. MDIFW recently included Big Spencer among the handful of sites in Maine providing habitat for this species of special concern. Cliffs on the southeast side of the unit could provide nesting sites for ravens.



Bicknell's Thrush (photo by Yves Aubrey, Canadian Wildlife Service)

Point counts on Big Spencer in 2001, 2003, and 2004 conducted by Vermont Institute of Natural Science (VINS) detecting the following bird species: Bicknell's thrush, Swainson's thrush, blackpoll warbler, winter wren, white throated sparrow, American robin, black-capped chickadee, boreal chickadee, brown creeper, black throated green warbler, cedar waxwing, golden crowned kinglet, hermit thrush, magnolia warbler, myrtle warbler, Nashville warbler, ovenbird, purple finch, rose breasted grosbeak, ruby crowned kinglet, slate colored junco, yellow bellied flycatcher, yellowbellied sapsucker, and yellow shafted flicker.

There are limited wetlands along the eastern border of the property and no ponds on the property. Amphibian species are limited by a lack of suitable habitat. Reptile species found in this type of habitat are northern redbelly snake.

Recreational Resources:

Current uses include hiking, bird watching tours, snowmobiling, and dispersed hunting. The state has received requests for bearbaiting sites on the unit, but none have been granted. An established trail (an old jeep trail that was constructed to serve the now abandoned warden's cabin at about elevation 2,000) leads up the east slope of the mountain. The trail to this point is used by both hikers and snowmobilers. It is not a groomed trail, and is quite steep in places. The trail is also eroding in places. The hiking trail continues on from the cabin and terminates at the mountain's east summit. The summit, though it contains a number of structures, affords panoramic views of Mt. Katahdin and many of the region's larger lakes.

Historic and Cultural Resources:

Big Spencer Mountain was an important fire lookout tower station for the Moosehead region, and held the State record as the longest continually operated fire tower, from 1906 to 1991, nearly 85 years of service. It was discontinued when the Forest Service replaced staffed towers with a program using periodic air reconnaissance flights. The fire warden's cabin remains on the mountain, in deteriorated condition. The tower itself is located on lands retained by Northwoods, LLC at the top of the mountain.

Warden's Cabin (BP&L photo)
Fire Tower (Al Hutchinson photo)



Timber Resources:

This 4,242 acre parcel was gifted to the State with the provision that it be designated as an ecological reserve. Thus timber management will not be an option on this tract.

The inventory done by Wagner in 2000 covered 3,198 forested acres and estimates the stocking to be 25 cords per acre. Nearly all of the other 1,044 acres is exposed ledge or noncommercial forest land on Big Spencer itself. Perhaps half of the commercial (inventoried) forest land is a mix of types at the lower elevations of the tract, especially east of the peak. These areas have received light to moderate cutting over the past 20 years, and have moderate to full stocking. In between those two broad land types lies a mature northern hardwood stand (synonymous with tolerant hardwoods for this document) that has had little or no harvesting during the past 30+ years. This stand probably would not meet the definitions of old growth, perhaps not even the current threshold for "late successional", but does have significant volumes in large stems.

On the inventoried acres as a whole, hardwoods are dominant (85% of total volume) and sugar maple is the most common species, making up 49% of the volume. Beech, spruce, and yellow birch are next, each holding 10-11% of tract cords.

Administrative Management Concerns:

Structures: In addition to the warden's cabin, there are two "squatter's" cabins located on the southern edge of the parcel. The future of these buildings, which are simple tar papered woods camp buildings, must be decided. The outbuilding at the warden's cabin also contains cans of old paint and possibly other hazardous materials that need to be removed and disposed of properly.

Roads: Two woods management roads appear to lead into the parcel on the northwest side and eastern boundary. These could be access points for unauthorized motorized use (such as ATV's) and should be blocked and monitored.

